STEEL
The Metalworking Weekly

EDITORIAL INDEX

for

VOLUME 146

January 1 to June 30, 1960

Subject Index 3
Company Index . . . 14
Author Index 22

THE PENTON PUBLISHING COMPANY

Penton Building, Cleveland 13, Ohio

SUBJECT INDEX

A

Abrasives:
Diamond abrasive eases metallographer's task, 2/8, p. 80
Metal abrasive producers accent performance (shot and grit materials), 2/1, p.88
Vibratory deburring, devices separate abrasive media from parts, 5/2, p.71

Accidents:
Cost of job-incurred accidents, 6/13, p.114
Lorain Works safety record, 2/1, p.34

Adhesives: See Bonding

Africa:
How African unrest could affect you, nonferrous markets, 6/27, p.144
Sahara iron ore project gets World Bank loan, 4/4, p.97

Air Conditioning:
Equipment sales, 6/6, p.58

Aircraft:
A-plane possible, 5/2, p.39
Automated flight, Delta Dart jet, 4/4, p.81
Bottle size jet engine to propel satellite, 5/23, p.144
Capital Airlines, stainless battery case, 5/23, p.136
Fluoroscope detects bombs in packages, 2/8, p.33
Helicopter engine, 23 lb turbojet researched, 1/25, p.25
Hercules, giant troop-cargo carrier, 3/7, p.49
Levacar (to and from airports), Ford experimental lab, 500 mph, 6/13, p.102
Private planes used, 2/15, p.64
Supersonic air travel on way, 4/25, p.56
Transport of high rocket boosters forecast, nonrigid airship feasible, 6/13, p.118
United Air Lines jet engine maintenance base: The metalworking look, tailored for an airline, 4/4, p.136

Aircraft Structurals:
Aluminum diecast louver for air exit on Electra paid off four ways, 3/28, p.96
Aluminum extrusions for Titan, 2/1, p.86
B-70 advances in manufacturing processes—Mach 3, 1/18, p.86
Brazed sleeve joins ends of steel tubes, TO, 1/11, p.69
Damping material lessens noise and vibration, protects structures, 2/15, p.131; 3/7, p.88
Flash buttwelds in aluminum, safe and reliable, 3/14, p.110
Supersonic fighter Vigilante uses tough steel for landing gear components (USS Strux-high strength-to-weight ratio), 1/18, p.96

Air Force:
AF contractors for Minuteman (ICBM), 2/8, p.36
AF-Westinghouse program: Molecular electronics, 2/1, p.44
Electronic translator, Russian into English, 5/30, p.28
Lockheed study: Flash buttwelds in aluminum safe and reliable, 3/14, p.110

Air Safari: See Business (Markets)

Air Tools: See Tools (Hand)

Alloy Casting Institute:
Moves headquarters, B, 2/22, p.65

Alloys:
Boron isotope used for nuclear alloy, 5/16, p.112
Columbium alloy new, TO, 2/1, p.83
Copper-base alloy (77) condenser tubes, corrosion test, 5/23, p.151
Gold-antimony alloy for transistors, 2/15, p.123
Liquid alloy for hydraulic fluid, TO, 1/11, p.69
Magnesium-thorium alloys for missiles, hot forming, 2/15, p.138
Nickel-chromium beats heat, TO, 5/9, p.139
Palladium alloy eases hydrogen purification, 6/27, p.81
Spring wire alloy, TO, 6/27, p.75
Superalloy forgings (Rene, Waspaloy, Unimet) leap size barrier, 1/11, p.72
Superalloy springs survive brazing heat, 2/22, p.68
Thermoelectric alloy new, available in quantity, 6/13, p.160
Zinc-copper-titanium new (Hydro-T-Metal), 1/18, p.114
See also Steel Alloys
See also Stainless Steel

Aluminum:
1960 sales, production: New records sure if aluminum keeps pace, 3/14, p.135
Alumina for missile nose cones, 3/28, p.96
Aluminum can market, 4/18, p.87
Aluminum cans for fruit juices? 6/6, p.45
Aluminum diecast louver, Electra air exit, 3/28, p.96
Aluminum distributor sales, 6/20, p.55
Aluminum do-it-yourself house, 3/14, p.39
Aluminum extrusions make a missile skin (Titan), 2/1, p.86
Aluminum foil key to new method of producing negative ions (irradiation), 1/18, p.89
Aluminum freight cars carry bigger payloads (gondola and hopper cars), 5/2, p.80
Aluminum gondola cars, 4/11, p.44
Aluminum oxide extracted from coal mine waste, 6/6, p.54
Aluminum packaging market, 4/25, p.55
Aluminum wrought products shipments, 5/9, p.86
Auto use:
1960 outlook, 2/1, p.33
Aluminum engine trend snagged, 2/1, p.58
Overseas use, 3/28, p.66
Carbon tetrachloride ups aluminum strength, TO, 6/6, p.97
Church roof takes 20,000 lbs, 6/6, p.45
Flash buttwelds in aluminum safe and reliable, 3/14, p.110
Molten aluminum supply for Fabricast plant (Alcoa-GM contract), 2/1, p. 43

Aluminum Assn.:
Elects, 2/15, p.110

Aluminum Extruders Council:
Encourages foreign competition, 4/18, p.72
Two-price charge, aluminum producers, 3/14, p.48

American Foundrymen's Society:
Elects, B, 5/16, p.89

American Gear Manufacturers Assn.:
Annual meeting, elections, 6/13, p.117

American Institute of Mining, Metallurgical & Petroleum Engineers Inc.:
Fairless award to White (Republic), 2/15, p.65
Installs officers, B, 2/22, p.65

American Iron & Steel Institute:
Compiles district ingot rates (chart), 3/7, p.129
Elects, B, 6/6, p.91
Meeting: Speakers stress steel's competition, 5/30, p.38
Steel consumed by construction equipment, 4/18, p.72
Steel employment costs, 3/7, p.38
Steel expansion (world); employment, payroll costs, 4/18, p.71

American Iron Ore Assn.:
Jackson named chairman, 6/27, p.125

American Management Institute:
Materials management seminar, 2/15, p.66

American Marketing Assn.:
Elects, B, 5/9, p.136

American Society for Metals:
Metal Documentation Service (reference material), 1/11, p.38

American Petroleum Institute:
Pipeline usages predicted, 2/8, p.36

American Powder Metallurgy Institute:
A technology div. of Metal Powder Industries Federation, 1/11, p.67
Detroit Powder joins, B, 4/18, p.116
Philadelphia section, B, 4/25, p.104

American Road Builders' Assn.:
Elects, B, 2/8, p.73

American Society for Metals:
Machine searching, boon to research: Metals documentation service, 1/11, p.38
Technical Council formed, Fisher chairman, 3/14, p.82

American Society of Lubrication Engineers:
Elects, 5/23, p.124

American Society of Tool & Mfg. Engineers:
Detroit tool show, 5/2, p.39
Forms Latin American chapters, 4/18, p.116
New name, 2/22, p.65

American Supply & Machinery Manufacturers Assn. Inc.:
Elects, B, 6/20, p.99

American Tin Trade Assn.:
Elects, B, 6/13, p.147

American Welding Society:
Thomas Jr.: Fights costs of welding equipment, 4/11, p.88

American Zinc Institute:
Elects, B, 4/25, p. 104

Anodizing:
Aluminum process, 2/29, p.96

Appliances:
Appliance makers set for '60 surge, 1/18, p.61
Massey (GAMA) reports appliance research, 4/11, p.43

Area Development:
More land for industry necessary with low-long building, campus-type development, 6/20, p.54
Move to suburbs, plus and minus factors to check, 3/14, p.50
Urban renewal program, 3/7, p.54
Youngstown Area Dev. Citizens' Committee report, 6/20, p.65

Army:
Army builds up tactical war muscle, Ft. Benning, Ga., ground weapons, 5/9, p.108
Army unveils new fluid control, 3/14, p.49
Davey Crockett (gun), titanium usage, 5/16, p.42
Electronic ear tunes in faint radio signals from outer space, 4/18, p.83
Greenland research reactor, installation skids, 4/4, p.81
Machine tool obsolescence, study by Johns Hopkins, 3/21, p.94 and 5/9, p.102; and study rejected by Army, 6/20, p.53
Research and development conference plans for next decade, brainstorming used, 3/7, p.54

Army Ballistic Missile Agency:
Rocket engine to power manned flights to moon, 2/15, p.75

Associated Industries of Cleveland:
Ray Vacha, professional labor negotiator, 1/18, p.63
Ray Vacha comments on trends of labor negotiations, 4/11, p.53

Association of American Railroads:
Loomis: Five areas where changes are needed, 5/2, p.37

Association of Executive Recruiting Consultants:
Formed, 2/1, p.34

Athletic Goods Manufacturers Assn.:
Leisure market, report, 6/6, p.45

Atomic Energy:
1968: AEC sets goal for competitive commercial use, 2/22, p.40
1970: Nuclear powerplant in orbit, 4/11, p.43
AEC plans nuclear powered rocket, 3/14, p.40
AEC projects to private industry urged by Chamber of Commerce, 2/1, p.53
AEC uranium for civilian use, cost per kilogram, 6/20, p.123
A-plane possible, 5/2, p.39
Arctic powerplant-prefab, key skid assembly, 4/4, p.81
Atomic powerplant planned by Southern Calif. Edison, 5/9, p.87
Atomic ship costs competitive, 4/25, p.70
Boron isotope used for nuclear alloy, 5/16, p.112
Detroit reactor, permit rejected, 6/20, p.56
Irradiation of aluminum foil forms negative ions, 1/18, p.89
Nuclear generating capacity, 4/25, p.54
Nuclear lab installs rolling mill, 2/22, p.71
Nuclear mining, experiments urged, 4/11, p.59
Radioisotopes: Manmade atoms cut industry costs, how 284 firms effect savings, 1/18, p.53
Radioisotopes insertion (Samarium-153) aids measuring turboprop wall thickness, 5/23, p.147
Radioisotope course, Princeton Lab, 5/23, p.140

Australia:
Attracts overseas capital, 3/28, p.53
Steel labeling by U. S., 2/15, p.83

Automation:
A new foreign threat (editorial), 5/9, p.91
Atmosphere furnace automates stainless tube annealing (Trent Tube), 2/8, p.82
Automatic drum shell manufacturing line (Inland), 5/23, p.132
Bearing plant chip handling, oil recovery system (Link-Belt), 1/18, p.90
Bearing plant material handling systems (Link-Belt), 6/30, p.69
Data logging and computer system (Daystrom), 1/25, p.25
Purdue conference, 3/7, p.79
Transfer conveyor line speeds structural fabricating (Mulfab), 1/11, p.70

Automotive:
1960: Detroit drives for economy decade (compact cars, new assembly, manufacturing techniques), 1/4, p.117
1960 problems tackled (noise in unitized construction, decentralization, diversification), 1/11, p.51
1960 sales, 2/1, p.57; 4/25, p.79; 6/20, p.79
1961 design highlights, 1/4, p.118; 2/8, p.59; 5/2, p.49; 6/13, p.127
1961 models, "guessing game," 6/13, p.127
1961: Motordom plans face lifts (STEEL's artists impression of '61 Ford), 2/8, p.59
1970 cars, how production men view, 2/29, p.63
1976: Number of vehicles forecast, 3/7, p.37
Aluminum engine trend, 2/1, p.58
Aluminum's use overseas, 3/28, p.66
Chevrolet flow coats truck, auto parts, 3/7, p.100
Compacts (British): Triumph Herald, Hillman Minx, 4/25, p.80
Compact sales, 1/18, p.68; 2/22, p.50
Compacts: Economy six cylinder coming back, 3/7, p.63
Compacts: Galvanized sheet spot-welded, 2/22, p.49
Compacts readied for '61, four models added, 5/9, p.112

Compacts, suggested new names, 3/7, p.64
Consolidated manufacturing centers? 1/11, p.51
Corrosion problems, 1/25, p.50
Corvair engine, how parts are cast, 6/27, p.59
Corvair readied for Round 2, 5/16, p.67
Exhaust purifiers, 5/9, p.85
Exhaust systems, uniformity on laws and state regulations pushed, 1/18, p.67
Ford hurdles galvanized welding barrier, 2/22, p.49
Ford eyes luxury compact model (Lincoln-Continental line continued), 3/21, p.109
Ford tells how it trimmed costs on Falcon engine (materials, engine specs), 5/30, p.51
Foreign auto prices (at New York), 1/4, p.95
Front wheel drive, will it return (Citroen revives interest), 4/18, p.97
Import market grows, 2/22, p.24
Import-export picture, 3/7, p.64
Levacar, compressed air, Ford experiment, 6/13, p.102
Muffler ceramic coats, 6/6, p.69
Muffler chromallizing test, 4/11, p.45
Muffler tubes, patterned perforations on hit-skip press, 2/22, p.80
Overseas markets lucrative, 1/18, p.68
Overseas shipping, packaging problem, 2/29, p.39
Plastics vie for more auto jobs (model building-plastic adhesives), 3/28, p.65
Plastic windshields, TO, 5/30, p.67
Plymouth revamps assembly plant, 1/11, p.52
Renault and Fiat cut prices, 6/27, p.34
Smog mufflers sought, 3/7, p.54
Steel requirement shift: Chrysler points to (coil steel, cold forming, lighter gages for unit bodies), 4/4, p.107
Steel use, autodom again No. 1 customer, 4/11, p.124
Structural adhesives, SAE report, 3/14, p.64
Studebaker girds for battle of compacts, 5/23, p.101
Tire tester, multistage dynamometer system, 2/29, p.64
Transaxles, 1/4, p.118 and 1/25, p.50
Transaxles: Whipshafts may solve linkage problems, 3/14, p.63
Unskilled workers, problem, 1/11, p.51
Welder guide insures perfect joints in car frames, 1/18, p.97
Wire seat frames, Fisher stamping presses, 4/11, p.69

Automotive Exhaust Research Institute:
Statement on exhaust systems, 1/18, p.67

Automotive Undercoating Manufacturers Assn.:
Elects, B, 2/1, p.74

B

Balancing Machine:
Caterpillar Tractor balancing machine speeds design, production, 1/25, p.76
GM device, tilt measured, TO, 5/16, p.95

Bank Relations: See Credit

Barges:
Offshore oil well drilling barge, 5/16, p.55

Bars:
Heavy bar stock custom cut with automatic cutoff saw, 2/15, p.126
Rail steel bars outlook, 6/6, p.135

Battelle Memorial Institute:
Brown joins staff, B, 2/29, p.77
Electrolytic generator, new power source for explosive forming (Dr. McCallum), 6/20, p.54
Purchased irradiation time, TO, 1/11, p.69

Batteries:
Capital Airlines encases battery with stainless steel, 5/23, p.136

Bearings, Bushings:
Lube failures, 4/11, p.87

Beneficiation:
Aluminum oxides extracted from coal mine waste, 6/6, p.54
Inland sintering, 5/16, p.110

Beryllium:
Field test for beryllium, 4/11, p.55
Trepanning speeded by new lathe, sintered beryllium billets, 6/13, p.162

Billets:
Pressure poured billets, method used for railroad car wheels, 3/7, p.90
Trepanning sintered beryllium billets, 6/13, p.162

Blast Furnaces:
See Maintenance
See Steelmaking

Birmingham:
Prohibits use of foreign steel in public buildings, 3/21, p.86

Blasting: See Cleaning, Blasting

Boats: See Outboard Motors

Bonding:
Adhesive bond trims rejections assembling cast pump parts, 1/11, p.87
Auto model building (plastic planking, epoxy paste), 3/28, p.65
Ceramic-metal bonding, TO, 1/25, p.65
Supercold adhesives, TO, 2/1, p.83

Books, Booklets:
Bimetallic casting, 1/11, p.99
Creative output, how to increase, 1/18, p.112
Foremen instructed on safety, 5/23, p.144
High temp. materials, 1/11, p.99
Hot dip galvanizing quality control, 6/27, p.76
Marketing action (effective), 1/18, p.112
Precipitation processes in steels, 1/11, p.99

Boron:
Boron isotope used for nuclear alloy, 5/16, p.112

Brass Mills:
Foreign competition, 5/2, p.25
Imports-exports: "X" marks brass mills' problem, 2/15, p.73
Dr. Clyde Williams (Battelle) speaks on expanded research projects, 5/30, p.128
Product development emphasized, 5/23, p.89

Brazing:
Brazed design cuts machining costs (stainless valve housing), 2/8, p.94
Carbide tips brazed by induction heating, 2/29, p.95
Nortobraze (honeycombs): Automatic process-radiant quartz heat lamps, 4/25, p.69; infrared, 5/30, p.84
Rohr Aircraft: Graphite cloth speeds heat cycle for stainless honeycomb panels, 2/22, p.74 and 2/15, p.131
Selas: Automatic machine cuts brazing time, 3/21, p.162
Superalloy spring wire survives brazing heat, 2/22, p.68

Buffalo Chamber of Commerce:
Survey: Companies six toughest problems, 2/29, p.37

Business & Defense Services Adm.:
Amends priority rule, 5/9, p.101

Business (Economy):
1960s (STEEL's Panel of Economic Consultants) predict upturn, 4/4, p.91
Barometric industries, outlook, 1/11, p.25
Bellwether tool and die outlook, 1/11, p.26
Business indicator chart (1940-1960): Our affluent economy, 1/4, p.85
Business indicators-1st quarter, Commerce Dept., 5/30, p.25
Dollar value dropping (chart), 1/25, p.24
Inflation (chart): Labor costs per unit up, profits down, 3/21, p.85
Inflation, how to halt (GE-Parker), 2/1, p.31
Inflation outlook, steel settlement, 1/25, p.33; 2/1, p.31
Inflation takes its toll (manufacturer's earning power before taxes to pay costs of replacing machines), 4/18, p.93
Inflation: U. S. Steel review of employment costs vs. inflation, 3/21, p.97
Money and interest rates, debate shapes up, 1/25, p.24
Tight money won't cut inventories, credit available, 1/18, p.54
See Also Editorial

Business Failures:
1959 figures, 2/1, p.32
April failures, 5/30, p.25

Business (Markets):
Air Safari (STEEL editors): '60—Solid all the way (summing up), 5/30, p.35
Eastern states, 5/2, p.33
Gulf states, 5/30, p.36
Great Lakes states, 5/9, p.51
Midwest states, 5/16, p.51
West Coast, 5/23, p.85
Aluminum cans, 4/18, p.87
Aluminum extrusion, 4/11, p.54
Aluminum sales, production, 3/14, p.135
Appliances, 1/18, p.61
Collapsible metal (squeeze) tubes, 2/15, p.79
Components, 3/14, p.47
Construction steels, extra strong, 6/13, p.197
Conveyors, 3/21, p.95
Diecasting, 3/28, p.55
Gearmakers, 6/13, p.117
Gray iron foundries, 4/25, p.137
Instruments—1980 forecast, 6/27, p.54
Lead, zinc (world markets), 4/25, p.63
Lift truck sales, 4/25, p.68
Manufacturers' wire, 4/18, p.165
Metal furniture, 2/22, p.39
Metal, lath, 2/8, p.48
Metalworking (see)
Porcelain enamel, 2/29, p.52
Rare earths, 5/9, p.180
Rail steel bars, 6/6, p.135
Stampers, 4/11, p.58
Steel plates, 5/30, p.107
Structural steel fabricators, 6/13, p.111
Tin mill products, 3/28, p.113
Vinyl-metal and laminates, uses, 2/22, p.103

C

Canada:
Metalworkers ride upswing, 3/21, p.84
Saskatchewan steel plants, 5/16, p.86
Steel capacities, 6/27, p.103
Vancouver Island steel plants, 3/14, p.49

Canmaking:
Canmaker tests automatic sheet sorting, stacking, 5/16, p.106
Seamless method may boost aluminum canmaking, 6/27, p.82

Capacity:
Aluminum primary producers, 3/14, p.135
Hot rolled steel capacity, facilities, 6/13, p.201
Steel finishing, U. S. and Canada, 6/27, p.103
Steel ingot, how '60 capacity is divided (companies), 1/18, p.57
Steel district ingot rates (chart), AISI, 3/7, p.129
Steel operating rate, why it dropped, 4/18, p.81
Steel operating rate forecast, 5/23, p.75

Capital Expenditures:
Capital spending bounces back: Plant and equipment expenditures (Commerce and SEC), 3/21, p.93
GE urges spending efficiency, 2/15, p.63
Metalworking, nine types of equipment, 1/11, p.46
Railroads dilemma, 5/2, p.36
Republic Steel, '60 outlay, 3/7, p.48
Steel industry plan for 12 types of equipment (1960-1st half vs 1959 last half), 1/18, p.52
Steel industry, 1960 budget, 2/1, p.71
See also Production Efficiency (equipment buying)

Carbides: See Tools (Cutting)

Case Institute of Technology:
200 businesses use Univac (Remington) for simulated game of market management problems, 3/14, p.53

Casting, Castings:
Cereal binders (corn-type) up quality, slash casting costs 1/18, p.92
Corvair engine parts, how cast, 6/27, p.59
Exhaust manifold castings: Wasted handling time cut by milling parts en route, 3/14, p.108
Flow design for castings puts metal where it should be (tractor gets Unitized Stress Flow), 3/21, p.156
Flying saw attachment, continuous casting copper billets and slabs, 2/22, p.86
Foam polystyrene pattern simplifies casting Bronze Pegasis, 5/16, p.115
Foam polystyrene patterns, ceramic shell molding gets boost, 5/9, p.140
Hot cracking test for alloys, 2/8, p.81
Lost wax process (investment casting) emerges as practical tool for small partmakers, 4/25, p.112
Malleable casters cash in on product redesign, 6/13, p.158
Positioning a casting for induction heating, 6/13, p.156
Pressure poured billets (foundry method for railroad wheels) may be shortcut for steelmakers, 3/7, p.90
Quality-design team cuts product costs (hydraulic piston pump), 3/7, p.98
Slip casting tech. widens powder metallurgy, 2/15, p.120
Tempering process (Determinant) improves castings, 1/22, p.73
Titanium and aluminum castings poured in same mold, 2/15, p.74

Census:
1970 population forecast, 1/3, p.91 and 2/15, p.63
Suburbs, 30% of U. S. population, 6/27, p.34

Ceramics: See Tools (Cutting)

Charts, Tables:
Continuous galvanizing coating lines (status) in U. S. and Canada, 2/29, p.111
How steel ingot capacity '60 is divided (firms), 1/19, p.57
Instruments, growth over next two decades (E-R-N study), 6/27, p.55

Chemicals:
Ammonium persulfate cuts porosity if thin plating, 6/20, p.119
Chemical foam (urethane) for panel sheets, 5/16, p.104

Chicago:
Expansion doubles, 3/28, p.52
Industrial plant investment projects, 6/20, p.56

China:
Boasts new metalworking savvy, 3/14, p.57

Chip Processing:
Automatic chip handling, oil recovery system at bearing plant, 1/18, p.90

Clad Metal:
Clad metals move into new markets, structural applications, 6/6, p.56

Clay Hot Top Institute:
Seek to cut ingot pouring costs, 2/15, p.137

Cleaning, Blasting:
Blast cleaner speeds maintenance, removes rust and scale from bus wheels, 3/28, p.102
Metal abrasive producers of blast cleaning and peening put accent on performance, 2/1, p.88
Mechanical descaler (bars for industrial grating), 2/29, p.85
Ultrasonic cleaner, new sandwich-type transducer, 5/9, p.159
See also Metal Cleaning

Cleveland Engineering Society:
Inventions exhibit, 3/28, p.62

Coal Mines:
Midwest mine, (Benton, Ill.), new coking coal source, 6/20, p.55
North American Coal: Extraction of aluminum oxides from coal mine wastes, 6/6, p.54

Coating Lines:
Continuous coating lines-U. S. and

Canada (operation, under construction, contemplated) chart, 2/29, p.111

Coil Lines:
Automated slitting, welding improve industrial grating, 5/16, p.100
Coil fed sheeting lines, machinery sorts and stacks, 5/16, p.106
Coil tilter adds warehouse efficiency, 5/23, p.140
Flying press (warehouse) converts coils to stampings in one operation, 2/15, p.125

Coil Springs:
Openhearth roof—spring suspension, 6/6, p.106

Coke Ovens: See Steelmaking

Cold Forming: See Forming, Shaping

Colleges:
1960 grads, salaries, competition, 2/22, p.24; 4/18, p.82
Campus recruiting, suggestions, 2/22, p.25
Voluntary funds, 2/22, p.25

Color:
Plastic powder coating for metals, 3/7, p.83
Tinted stainless steel colors on way, 4/11, p.54

Columbium: See Steel Alloys

Communications:
Corporate symbols not adequate for communications job, 6/6, p.45
Republic's Patton: Ten commandments of communications, 6/6, p.44
Setup for '60 Machine Tool Expo, 3/28, p.40

Communications Center:
Navy (Culter, Maine): Huge steel counterweights guard spidery network, 5/23, p.130

Company Operations:
AC Spark Plug: Unraveling production snarls, 5/16, p.54
Air Products: How it thrives on oxygen steelmaking, 3/21, p.98
Anderson Corp.: How to rebuild a company, 3/28, p.54
Atlantic Steel: What to do when imports hurt, 2/29, p.53
Colson: Salesmen sell first, train later, 4/4, p.97
Frankel Co.: Scrapman's apothecary shop, 4/25, p.74
Huck Mfg.: diversification, changes its marketing to keep pace, 6/6, p.58
Midwest Steel to roll in '61, new Portage, Ind., plant, 6/20, p.69
Singer Mfg.: How Singer sells the world market, 5/9, p.105

Components:
1st quarter survey, 1/4, p.381
2nd quarter survey, 4/4, p.177
Why partsmakers hold the price line, 3/14, p.47

Construction:
1960: Construction equipment sales, 2/1, p.41
1960: Building stimulates steelmen, 3/21, p.207
1960-70: $1 trillion to go for new construction, 4/11, p.55
1970 estimate, 3/21, p.86
Chart: January construction (1959-60), Commerce Dept., 2/22, p.23
Chart: Industrial building costs trends, Austin Co., 4/11, p.43
Pre-engineered building, 20 yr. roof guarantee, 6/20, p.54
Sky's the limit for metal buildings, (steel or aluminum), 5/23, p.88

Computers:
Designers are putting computers to work instead of slide rules, 6/20, p.110
See also Data Processing
See also Steel Mill Controls

Construction Steel:
Equipment and machinery, steel tonnage used, 4/18, p.72
Extra strong steels, industry report, 6/13, p.197
Metal buildings, major steel consumers, 5/23, p.88

Consultants: See Management

Consumer Durables:
Replacement sales, 3/28, p.40

Consumer Buying:
Consumer attitudes reflect steel strike impact, 1/18, p.41
Consumers ready to buy, U. of Mich. survey, 4/4, p.81

Consumer Goods:
Metalworking industries (chart) growth '47 to '59, 2/22, p.26

Containers: See Packaging

Controls:
See Remote Control
See Numerical Controls
See Steel Mill Controls

Cooling:
Thermoelectric cooling equipment, commercial supply, 2/8, p.83
Transformation is faster with controlled cooling: Isothermal pits at Timken, 4/4, p.156

Copper & Brass Warehouse Assn.:
Officers installed, B, 5/16, p.89

Copper Institute:
Contract settlements, firms, 2/22, p.34

Copper & Brass Research Assn.:
Elects, B, 6/6, p.91
Dr. Clyde Williams (Battelle) speaks, 5/30, p.128

Copper Products Development Assn.:
Product development - marketing stressed by Dr. Williams, 5/23, p.89

Corporate Symbols: See Communications

Corrosion:
Auto unitized bodies fight corrosion, 1/25, p.50
Mercury checks corrosion of new copper-base alloy 77 (condenser tubes), 5/23, p.151
People produce rust, chloride iron detected, TO, 5/16, p.95
Plastic valves resist sulfuric acid, 2/1, p.98
Titanium cooking kettle, corrosion test, 2/8, p.88
Zinc bodyguard on galvanized steel helps fight vs corrosion, 2/1, p.96

Cost Crisis:
Announcing (1959) winners, 3/7, p.85

Cost Cutting:
Crush wheel dressing pays grinding dividends, 2/29, p.92
Grinding setup slashes slab conditioning costs, 2/22, p.71
Mechanical descaler cuts costs, 2/29, p.85
Shake deburring rings up savings for National Cash Register, 5/2, p.70

Counters, Computers:
See Data Processing
See Steel Mill Controls

Credit:
How to improve your bank relations for equipment buying, 3/21, p.106
Tight money won't cut inventories, 1/18, p.54

Cryogenic: See Gas Storage Tanks

Curtain Walls:
Glutinous plastic applied as core for curtain walls, Urethane foam, 5/16, p.104

Customer Service:
Customer service helps sell product line, marketing your "hidden extras," 1/18, p.56
Repair shops adopt marketing look, 6/27, p.47
U. S. Steel, application research building, 5/23, p.95

Cutting, Shearing:
Arc cutting torch (wire cloth, expanded metal), 2/29, p.84
Automatic cutoff saw for heavy bar stock, custom cut, 2/15, p.126
Bandsaw cutoff time reduced by double carbide material, 4/25, p.127
Bandsaw units employ spark machining concept (quenched arc cutting), 3/28, p.90
Flying press in warehouse cuts sheet metal, 2/15, p.124
Flying saw attachment, continuous casting of copper billets-slabs, 2/22, p.86
Scrap sheared to length, 3/7, p.102

Cutting Tool Manufacturers Assn.:
Elects, 2/29, p.77

D

Data Processing:
200 businessmen solve simulated market management problem with Univac (SAM and Remington sponsor), 3/14, p.52
Bendix G-20 Central Computer (Control Buffers), 5/16, p.42
Cadillac Gage: Data processing helps firm keep grip on production costs, 6/6, p.102
Comex (communications system) transmits shipping information at Westinghouse, 5/23, p.75
Computer lines added by M-H and RCA, 4/18, p.73
Computer to diagnose illnesses, 6/13, p.103
Computers to make "vice presidential decisions," 6/27, p.35
Copiers reproduce open hearth reports, 6/27, p.93
Data logging-computer system, Louisiana Power & Light, 1/25, p.25
Designers are putting computers to work (math problems), IBM 650, 6/20, p.110
GE data storage, thermoplastic recording small, 1/25, p.25
GE enters medium price computer market, 6/27, p.35
GE manager lists computer problems, 5/23, p.75
GE miniature computer, 3/28, p.42
IBM computer school (SRI), 6/13, p.103
IBM's new (MOS) system controls complete production cycle, 6/6, p.55
IBM telephone transceiver, 3/28, p.41
IBM translator (Russian into English), 5/30, p.28 and 6/20, p.105
IBM transistorized 7080 on market, 2/1, p.34
Paperwork put on small amount of punched tape, Norvair production orders, etc., 2/29, p.39
Printer-plotter system, faster computer results, 2/8, p.36
RCA predicts growth, 5/16, p.41
Sharon Steel order processing computer, 1/25, p.62
Small computer (typist operates), decentralized data processing, 3/21, p.85
Telemetry, turbine blade performance logged, 4/18, p.71

Deburring:
Shake deburring rings up savings for National Cash Register, vibration equipment, 5/2, p.70

Defense:
Army (Ft. Benning, Ga.) builds up tactical war muscle, ground war capability, 5/9, p.108
Defense policies (Gale to Burgess letter), 4/18, p.88
Defense spending, how much of GNP, 3/21, p.100
Defense spending changes, metalworkers gain (proposed additions, cuts), 5/16, p.58
Editorial: Your stake in defense, 5/16, p.47
Mr. K's impact on civil defense and defense spending, 5/30, p.42
Missile budget $7 billion, 2/1, p.48

Defense Contracts:
AF contractors for Minuteman ICBM, 2/8, p.36

Depreciation:
Fight for production efficiency with depreciation reform, 4/18, p.91 and 5/2, p.43
IRS surveys methods, all industries, 6/6, p.46
Metalworking not using fast writeoff (editorial), Ostriches in the Sand, 5/2, p.29
Office equipment and furniture, depreciation methods, 3/7, p.39
Treasury (Anderson) asks for reform: Partial depreciation in sight? 2/22, p.33
Treasury reform proposal "Pig in a Poke" (editorial), 3/21, p.89
Treasury proposal shelved, 3/28, p.40
World systems, 4/18, p.91

Descaling:
Alkaline metal cleanser eliminates acids, 2/8, p.94
Mechanical descaler for hot rolled bars, cost savings, 2/29, p.85
Salt bath descaling bolsters annealing and pickling line (stainless strip 300 and 400 series), 6/20, p.122

Design:
Aluminum diecast louver for air exit for Electra: Simplified design eliminates 31 parts, 3/28, p.96
Balancing machine aids tractor designer for new parts, 1/25, p.76
Frame redesign (flatbed trailers) lightens, strengthens structurals, 3/14, p.100
Hydraulic pump casting, redesign cuts costs, 3/7, p.98
Kuyper (GE): Who owns design ideas? 5/16, p.64
Welded cluster gears solve transmission case problems, 2/22, p.72

Designers:
Designers are putting computers to work (instead of slide rules), 6/20, p.110

Diecasters:
1959 consumption of aluminum-zinc, 4/18, p.188
1960 outlook, 3/28, p.55
Indexing-head casts four letters of Chevrolet name, TO, 4/25, p.107
Simplified design eliminates 31 parts: Aluminum diecast louver for Electra air exit, 3/28, p.96

Dies: See Tools & Dies

Directors: See Management

Distribution: See Warehousing

Diversification:
Huck Mfg., 6/6, p.59
Rails fight to diversify, 2/15, p.74

Dollar Value: See Financial

Drafting:
Pasteups simplify drafting (Ledex), 4/25, p.76

Drives & Controls:
Fluid control unveiled by Army's DOFL, 3/14, p.49
Package system (preassembled) expedites mill revamp at McDonald Wks., 3/7, p.84
Proximity switch controls pipe conveyors at welding stations, 2/22, p.87

Drop Forging Assn.:
Industry report, 2/15, p.65

Dust Collectors & Filters:
Swing and sound (vibration) clean exhaust gas filter bags (glass), 2/8, p.86
Wet-inertial dust collectors clear frit from plant air, 6/13, p.161

E

Earnings, Profits: See Financial

Earthmoving Equipment:
Construction equipment sales outlook, 2/1, p.41

Earthquake-Proof Structures:
AISI team study damage in Morocco, 3/28, p.40

Economics: See Business (Economy)

Editorials:
Anyone for Better Reliability? 4/25, p.59
Automation: A New Foreign Threat, 5/9, p.91
Be a Yankee Trader! (foreign trade policy), 2/8, p.39
Business Ethics a Must! 3/28, p.45
Business Is What You Make It! 6/27, p.39
Challenge of Defeat (steel settlement and production efficiency), 1/11, p.31
Depreciation proposal—It's a Pig in a Poke, 3/21, p.89
Fighting Back (Iron ore-foreign competition), 3/7, p.43
Higher Steel Prices? 3/14, p.43
How Much Inflation? (steel settlement), 1/18, p.47
Labor's Dream World! 2/22, p.29
Labor on Trial! 6/13, p.107
Lesson in Efficiency, 6/20, p.59
Mobilize for Efficiency, 1/25, p.29
New Role for Maintenance! 4/11, p.49
No Time for Pessimism! 4/4, p.87
Ostriches in the Sand (use depreciation reforms), 5/2, p.29
Profitless Pricing! 2/29, p.43
Swimming Upstream (foreign competition), 2/15, p.69

The Competitive Sixties! 1/4, p.91
Wake Up and Grow (metal trends), 4/18, p.77
What Price Prosperity? 6/6, p.49
Why Another Recession? 2/1, p.37
Why Worry About 1961? 5/30, p.31
Will Your Product Sell? 5/23, p.81
Your Stake in Defense, 5/16, p.47

Electric Power:
Capacity climbs; atomic plant planned, 5/9, p.87
Electrolytic generator new power source for explosive forming, 6/20, p.54
Electric generator shafts heat treat, rotors processed upright, 6/13, p.172
New Zealand geothermal power station, hot steam from Wairakei region, 6/27, p.53
Transmission lines get zinc corrosion coat, 2/1, p.96
See Also Thermoelectricity

Electrical Apparatus Service Assn.:
New name, B, 2/8, p.73

Electrical Equipment:
Switch system (Cypak) positions pipe conveyors at welding station, 2/22, p.87
Transistor static inverter: Tiny work horses promise cheaper conversion of dc to ac, 4/4, p.140

Electrical Machinery:
Industrial growth outlook, next two decades, 6/13, p.122

Electrodes: See Welding

Electron Beam:
See Melting
See Welding

Electronic Industries Assn.:
Forms Microminiature Committee, 4/18, p.116

Electronics:
Metal service selector for research, 1/11, p.38
Miniature electronic ear (supercooled for hi-fi) tunes in faint radio signals from outer space, 4/18, p.83
Molecular electronics: Look what's happening to electronics (Westinghouse-Air Force program), 2/1, p.44
Sarnoff predicts sales, 3/7, p.39
Tube ¾ in. long "Nuvistor," TO, 2/1, p.83
Warehouse electronics drive material handling trains (copper signal wires recessed in aisles), 6/13, p.173
See also Data Processing

Electroplating, Plating:
Ammonium persulfate prepares copper surfaces, reduces porosity of thin plating, 6/20, p.119
Dalic process makes plating comparable to painting, 3/28, p.98

Employee Programs:
Award system for "on the job," 4/4, p.83
Industrial Relations News survey: How to keep employees on job, reward and penalize, 4/4, p.83
Minuteman program, "on-the-job productivity," 2/22, p.37
Republic Steel, nonpartisan political education program, 2/29, p.38

Employment, Unemployment:
Employment trend, 1st quarter, 1/11, p.26; 2nd quarter, 4/18, p.73
Ohio (bellwether) employment lags, 6/6, p.44
Younger labor force, challenging problems, 2/8, p.45

Employment Costs:
Michigan defends its higher labor costs (Upjohn study), 3/14, p.60
Steel (world) hourly employment costs ('57), 1/4, p.94
U. S. Steel attacks wage inflation, 3/21, p.97

Engineering:
Designers are putting computers to work, replace slide rules, 6/20, p.110
Production efficiency, how to engineer for it, 5/16, p.61

Engineers:
Business employs 66% of scientists and engineers, 2/8, p.48
College degrees awarded, breakdown, 4/18, p.72
Kearfott correspondence courses, 2/15, p.66
Option plan for higher ranking engineers, 3/14, p.39
Shortage intensifies, 2/1, p.54

Engineers Joint Council:
Launches newspaper "Engineer," 4/25, p.104

Engines:
Moon rocket engine (ABMA), 2/15, p.75
Stationary engine failure often user's fault, 1/18, p.102
Tiny turbojet engine (23 lb) unveiled, 1/25, p.25

Entropy:
Five danger signals of industrial cancer (equipment buying needs), 2/8, p.53

Equipment Buying:
See Production Efficiency (Management Series)

Equipment Makers:
Sales outlook and comparisons (Commerce Dept.), 2/8, p.33

Europe:
ECSC export agreements with outside countries, 4/25, p.73
ECSC sets steel and ore records, 2/29, p.51
GATT: Monetary Fund, new credit guarantees, 3/28, p.56
GATT: Metalworking equipment tariffs proposed, 6/30, p.70

Executives: See Management

Expansion:
Galvanizers: Continuous coating lines, U. S. and Canada, operating or scheduled, 2/29, p.111
Metalworking plants, 2nd half, 6/20, p.53
Steel for '60, world, 4/18, p.71
See also Plant Expansions

Explosives:
ABCs of explosive metalworking outlined by Navy expert, 4 ways to produce welds, 3/21, p.140
100 firms active in high energy forming (explosive, hydroelectric, or electromagnetic), 6/13, p.169
Battelle: Electrolytic generator, new power source for explosive forming, 6/20, p.54
Convair - Feddersen: Explosive forming, new high energy rate, 4/25, p.108
Development for explosive metalworking, TO, 6/13, p.155
Metals heated before explosive forming, TO, 4/25, p.107
Nautical "blast off," explosive kit around mooring cable, 5/30, p.26

Exports, Imports: See Foreign Trade

Extraction:
Aluminum oxide from coal mine wastes, new dev., 6/6, p.54

Extrusion:
Aluminum extrusions make a missile skin (Titan), 2/1, p.86
Aluminum extrusions, markets, 4/11, p.54, 148
Outsized press produces seamless brass tubes for heat exchangers, 2/8, p.93
Powdered slugs show way to better aluminum impacts, 6/13, p.161
Vanadium tubing extruded experimentally, 1/11, p.87

F

Fabrication & Assembly:
Adhesive method cuts fabrication costs (cast pump parts), 1/11, p.87
Aluminum extrusions make a missile skin (Titan), 2/1, p.86
B-70 bombers: Solved—Mach 3 manufacturing problems, 1/18, p.86
Flying press in warehouse cuts sheet metal, converts coil to stampings in one operation, 2/15, p.124
Rocket chambers strengthened with welding wrap method, 2/8, p.84
Rocket motor cases handled with care during fabrication, 2/22, p.84
Seamless aluminum cans, 6/27, p.82
Spring wire fabricated superalloys, 2/22, p.68
Transfer line speed structural fabricating, 1/11, p.70
Transmission problem solved—by welded gears, 2/22, p.72

Facts & Figures:
Index to metalworking Facts and Figures, 1/4, p.137

Fasteners, Fastening:
Departure from custom speeds up riveting line, 3/28, p.88
Marketing story, bolts, 6/27, p.48

Fibers: See Metal Fibers

Filter Cleaning:
Swing and sound clean exhaust gas filters, 2/8, p.86

Financial:
'59 industry profits vs '58, 5/2, p.39
1st quarter earnings, 5/9, p.99
Corporation working capital, 4/25, p.53
Disposable income rising, 6/27, p.34
Dollar value dropping, 1/25, p.24
Investment firms (SBIC), 5/9, p.100
Metalworking profits, 1st half, 2/8, p.43
Metalworking, '59 profits, 2/8, p.44
Metalworking profits vs other industries, 3/14, p.38
Money and interest rates, debate, 1/25, p.24
Money and interest rates, inventory building, 1/18, p.54
Personal income, inflation-tax effects, 4/18, p.71
Steel earnings, '59, 2/8, p.44
Tight money won't cut inventories (credit, short terms available), 1/18, p.54

Financial Analysis:
Steel industry, '59, insert, 4/4, p.100

Finished Steel:
Capacity, U. S. and Canada, 6/27, p.103
See also Shipments

Finishes, Coatings, Paints:
Anodizing aluminum parts (Toro process), 2/29, p.96
Auto, truck parts get flow coats, 3/7, p.100
Ceramic coated exhaust system (auto mufflers), 6/6, p.69
Chromate coat on office machines solves tarnish problem in soldering, 4/4, p.155
Color-coated stainless, 4/11, p.54
Conduit finishing line, 4/25, p.127
Enamel coated sheet lines, 3/7, p.77
Enameling sheet, one-coat (scoreboard), 6/20, p.139
Enameling iron (Armco), one-coat, 2/1, p.34
Galvanizers continuous coating lines (U. S. and Canada), operating and scheduled, 2/29, p.111
Galvanized coating, what to look for, 6/27, p.76
Hard surfacing paste for conveyor wear surfaces, 3/14, p.111
Painted aluminum coil, 4/11, p.94
Plastic powder coating for metals, 3/7, p.82
Porcelain enamel's markets, 2/29, p.52
Vacuum metallizing-more functional uses, 2/15, p.78
Zinc bodyguard on galvanized steel helps fight vs corrosion, 2/1, p.96
Vinyl coated metal, uses, 2/22, p.103

Flame Cutting:
Electronic control, four torch, shape cutter, 5/23, p.133

Flow Design: See Castings

Fluid Power:
Army unveils fluid control unit, no moving parts, 3/14, p.49

Fluid Power Society:
Formed, 3/14, p.82

Flux:
Additive aids galvanizing, 2/15, p.142

Foreign Competition:
Aluminum producers (Alcoa-Kaiser) face two-price charge, 3/14, p.48
Atlantic Steel: What to do when imports hurt, 2/29, p.53
Buy American useless, White Star Machinery report, 4/25, p.56
Editorial: Be a Yankee Trader! 2/8, p.39
Editorial: Fighting back (iron ore situation), 3/7, p.43
Editorial: Lesson in efficiency, 6/20, p.59
Editorial: Swimming upstream, 2/15, p.69
GATT: Proposed tariffs on metalworking equipment, 6/20, p.70
GATT: Monetary fund, credit guarantees, 3/28, p.56
Home laundry appliance makers, 4/4, p.82
Impact of foreign competition (Walter Campbell testimony before Subcommittee (Wash.), 5/2, p.23
Mitsubishi vs. Plymouth (F-R-H) bid for Panama contract, 5/2, p.40; 5/23, p.91; 5/23, p.92

Foreign Markets:
American dollars go to common market, 1/11, p.27
Australia woos overseas capital, 3/28, p.53
China boasts new metalworking savvy (info gathered by Robert Westgate, Auckland, New Zealand), 3/14, p.57
Italy booms, 4/11, p.63
Pratt & Whitney export-import, two-way trade problem, 5/23, p.89
Refac sells world markets, 2/8, p.49
Singer sells the world market, 5/9, p.105
U. S. affiliates abroad build for American market, 3/7, p.53
U. S. metalworking, overseas outlets (firms), 1/18, p.80; 2/22, p.64; 5/16, p.81; 6/20, p.93

Foreign Trade:
Aluminum imports up, 2/15, p.74
Brass mill products, imports-exports, 2/15, p.73
Export aid, gov't takes steps, 3/7, p.49
Export Expansion Committee, five business leaders, 4/18, p.82
Export Trade Promotion Program blocked, 6/27, p.50
Hungary, steel exports, 4/25, p.73
Industrial equipment exports, most to Canada, 6/13, p.117
Iron ore imports, foreign sources supply a third, 3/7, p.50
Iron ore imports '59, 4/11, p.129
Italy removes restriction on U. S. products, 1/18, p.44
Japan seeks liberal trade rules, 2/1, p.33
Japanese transistor imports threatening, 2/15, p.83
Japan's boom aids U. S. exports, 6/13, p.121
Latins sign free trade pact, 2/29, p.51
Licensing agreements, 6/27, p.53
Licensing setups, Refac's clients, 2/8, p.49
Russian trade grows, 3/14, p.48
Russian restrictions eased by U. S., 6/20, p.54
Steel exports, look for comeback, 2/8, p.109
Steel imports (chart) by customs districts; by origin, 1/11, p.102
Steel imports-exports, 10 yr. outlook (Germany, Lone Star Steel), 5/30, p.25
Steel imports top '59 exports, 3/7, p.154
Steel imports, '59, 2/15, p.161
U. S. concessions on imports (listed), poker game begins, 6/6, p.60
Wire rope imports, 5/23, p.174

Forgings:
Electrochemically machined at North American, 4/4, p.142
Superalloy forgings (Rene, Waspaloy, Unimet) leap size barrier, 1/11, p.72

Forming, Shaping:
B-70: Solved—Mach 3 manufacturing problems, 1/18, p.86
Cold forming, Waterbury Farrel gets set for big gains, 5/9, p.144
Cold rolling splines on stainless shafts (Evinrude), 5/16, p.114
Heated mandrel expands, hot forms magnesium-thorium (for missile truncated cone), 2/15, p.138
High energy rate forming, how you can use (four new proc-

esses for space age), 4/25, p.108
High energy forming (explosives, hydroelectric, electromagnetic), 6/13, p.169
Hot forming magnesium alloy for missiles, 2/15, p.138
Hot sizing helps alloys meet closer tolerances, special shaping tech., 1/25, p.70
Hydrostatic presses form shapes, reform properties, 4/11, p.93
Nickel-base metals shaped into parts weighing up to 1000 lb (Superalloy forgings leap size barrier), 1/11, p.72
See also Explosives

Foundries:
ABCs of Gray Iron Foundrymen, market report, 4/25, p.137
Contest winners, malleable castings, 6/13, p.158
Equipment buying plans, '60s, 1/18, p.52
Malleable iron castings, '60 outlook, 2/1, p.42
Merchant pig iron shipments, 6/27, p.123
Pressure poured billets: Shortcut for steelmakers? 3/7, p.90
Safety records, 3/28, p.62
Steel foundries, sales gain, 2/22, p.38
See also Casting, Castings

France:
Monorail system, 4/25, p.73

Frankford Arsenal:
Pitman-Dunn Lab uses diamond abrasives to aid metallographers, 2/8, p.80

Freight Cars, Freight Rates:
Aluminum freight cars carry bigger payloads (all-welded gondola and hopper cars), 5/2, p.80
Aluminum gondola cars for Southern Railway, 4/11, p.44
Freight car shortage unlikely (except in hoppers, long gondola and boxcars), 4/4, p.96
Piggyback aluminum vans ordered by Canadian railroad, 5/23, p.78
Piggyback rail traffic, auto carrier plc., 2/15, p.63
Plastic doors for freight cars, Western railroad, 5/23, p.78
Weighing method (Railweight) for cars, 3/7, p.40

Furnaces, Ovens (Heating, Heat Treating):
Atmosphere furnace for stainless tube annealing, 2/8, p.82
Computer aids in design of gale velocity furnace, 2/1, p.84
Elpit types offer controlled heating, 5/23, p.138
Electron beam melting furnace, economy refinement methods, 6/6, p.98
Ford's continuous carburizing furnaces, 5/2, p.72
GE annealing furnace for stainless strip, 5/9, p.148
GE annealing setup for silicon steel, laminations fed automatically, 5/16, p.102
J&L contracts for 118 oven coke battery, 1/11, p.66
Outdoor sintering furnace, Freeport Nickel, Louisiana, 5/9, p.154
Pulsating type burners (Bliss) shorten copper melt time, 1/25, p.69
Ultrahigh pressure stacks boosts hot metal output, 3/21, p.148
Vacuum melt furnace, Allegheny Ludlum, 3/7, p.40

G

Gages:
Automatic gaging boosts production: X-ray and infrared sort scrap and measure strip-finishing stands, 5/30, p.81
Noncontact gaging system, Video Telegauge, installed in Eastern rolling mill, measures I-beams, 6/20, p.114
Ultrasonic thickness gage checks missile components, 2/22, p.87
X-ray gains in applications, 2/8, p.92
You can gage to millionths, but . . . 3/21, p.144

Galvanized Sheet: See Sheet & Strip

Galvanizing:
Continuous coating lines operating or scheduled in U. S. and Canada (chart): Galvanizers expand to meet demand, 2/29, p.111
How to tell good hot dip galvanizing, 6/27, p.76
Zinc bodyguard coat on galvanized steel resists corrosion (electric transmission line pic), 2/1, p.96

Gas Appliance Manufacturers Assn.:
Davis, president, 4/11, p.82
Massey: Research efforts, 4/11, p.43
Markets, 4/11, p.46

Gas Storage Tanks:
Cryogenic storage tanks for liquefied gases, 5/16, p.97

Gears:
AGMA, industry report, 6/13, p.117
Elastomer mated parts, TO, 5/16, p.95
Welded cluster gears—solves transmission problem, 2/22, p.72

General Services Adm.:
Federal gov't land for sale, inventory, 3/14, p.40
Graphite sales, 4/11, p.55
Magnesium plant, Calif., for sale, 2/1, p.34

Geographical Districts:
AISI district ingot rates, 3/7, p.129

Government:
Anti-Dumping Act, Japanese steel imports ruled no violation, 6/27, p.33
Antitrust:
A-C and I-T-E plead guilty in price fixing, 4/25, p.53
Aluminum price action, 5/9, p.102
Metals firms warned by Justice lawyers, 6/20, p.162
Reynolds Metals-Arrow Brands merger, 2/15, p.182 and 2/22, p.35
Stran-Steel, Metallic Building merger, 2/22, p.35
When is a merger legal? 4/11, p.60
Budget outlook '61, 1/25, p.23; and p.40
Export Expansion Committee, industry men, 4/18, p.82
Export Trade Promotion Program blocked, 6/27, p.50
FHA insures mortgages on aluminum homes, 2/8, p.50
GATT: Export-Import Bank's new credit guarantees, 3/28, p.56
GATT: Metalworking equipment tariffs proposed, 6/30, p.70
Legislative outlook, 60s, 1/4, p.108
Levering leads fight for Panama contract (Plymouth Locomotive vs. Mitsubishi), 5/2, p.40
Levering tells why Mitsubishi won contract, 5/23, p.92
Manpower study, Labor Dept., 2/8, p.45
Missile ground support equipment directory, 2/1, p.48
Missile-space investigations begin, 1/18, p.44
NLRB expedites unfair practice cases, 5/30, p.41; 4/25, p.70
Political action for businessmen, Mueller recommends, 1/4, p.106
Politics in steel settlement? 1/18, p.58
Small Business inquiries, 2/8, p.50
Transportation study, 3/21, p.100; 4/25, p.70
See also Defense

Graphite:
Graphite cloth speeds heat cycle (honeycomb panels), 2/22, p.74
Research development, 6/13, p.118

Grating:
Automated slitting, welding improve industrial grating, Dravo, 5/16, p.100
Mechanical descaler, cost saver, 2/29, p.85

Gray Iron Founders' Society:
ABCs of gray iron foundrymen, industry report, 4/25, p.137
Appoints cost consultant, 2/29, p.77
Co-op iron casting service, 2/15, p.110
McIntyre succeeds Quest, B, 5/30, p.65

Great Britain:
British firm builds erosion machine for American market, 3/7, p.53
Gets U. S. missiles, 4/25, p.70
Steel production '59, 2/15, p.83
Steel hits 98% of capacity, 4/25, p.73
Steel markets, 6/27, p.53

Grinding, Polishing:
Crush wheel dressing (centerless grinder) pays dividends, 2/29, p.92
Grinding setup slashes slab conditioning costs, 2/22, p.71
Johnson (Norton Co.) foresees grinding trends, 6/6, p.104

Gross National Product:
1970 living standards, 2/15, p.63

H

Heat Treating & Annealing:
Atmosphere furnace automates stainless tube annealing, 2/8, p.82
Automatic (Ther-Monic) hardens trunnion bearings, 5/23, p.136
Bassett process (thermomagnadynamics), developer, 5/2, p.82
Continuous annealing line (Aliquippa Wks) to help tin plate users, 6/27, p.80
Ford heat treat setup, group of gas fired furnaces, Transmission-Chassis Div., 5/2, p.72
GE: Continuous annealing grain oriented silicon steel produces transformer cores, Pittsfield, Mass., and Rome, Ga., plants, 5/16, p.102
GE: Vertical annealing furnace processes stainless strip (hydrogen and dissociated ammonia atmosphere), 5/9, p.148
Isothermal method: Modern heat treating helps firm compete (Empire Plow), 6/6, p.116
Isothermal pits at Timken: Transformation is faster with controlled cooling, 4/4, p.156
Positioner for heat treating castings, 6/13, p.156
Radiant quartz lamps (see Brazing)
Rotors processed upright, vertical furnaces for electric power generator shafts, 6/13, p.172
Salt bath descaling bolsters annealing and pickling line (stainless strip 300 and 400 series) without surface defects, 6/20, p.122

Highways:
API reports state tax diverted to other uses, 2/29, p.40
Electronic controls sought, 6/13, p.118
Federal spending, 1970 estimates, 6/27, p.50
Steel used in road building, 2/1, p.42
Welded wire mesh used in asphalt roads, 5/16, p.108

Hoist Manufacturers Assn, Inc.:
Elects, B, 3/28, p.79

Honeycomb Panels:
Bondcheck test may broaden honeycomb use (thermographic fluid), 5/23, p.134
Graphite cloth speeds heat cycle (brazing) stainless panels, 2/22, p.74 and 2/15, p.131
Nortobraze, radiant quartz heat lamps, 4/25, p.69 and 5/30, p.84
Quenched arc cutting (spark machining concept), 3/28, p.90

Hot Working:
B-70 Valkyrie (Mach 3 manufacturing problems solved) hot forming, 1/18, p.86
Do you really know how hot it is? (temperature control methods), 3/14, p.94
Heated mandrel expands, hot forms magnesium-thorium for missile cone, 2/15, p.138
Hot cracking test for stainless casting, 2/8, p.81
Hot machining cuts producibility barrier, 6/20, p.106
Hot sizing helps alloys meet closer tolerances, 1/25, p.70
InFab plant hot works refractory metals, technicians wear space suits, 6/13, p.116

Housing:
1980 home, electronic "wonders," 3/7, p.37; 3/14, p.37
Aluminum-build it yourself house, 3/15, p.39
Mobile homes growing market for metalworkers, 6/20, p.55
Porcelain enamel (scale model), 4/11, p.44
Prefab outlook, 4/4, p.83
Trend to more expensive homes, 3/28, p.41

Hydrogen:
Compact hydrogen generation and purification system, easily packaged for small volume, 1/11, p.77
Gas carried in steel tubing cools generators, 3/28, p.86
Purification eased by palladium alloy, 6/27, p.81

I

Incentives:
Are incentives getting obsolete? Management control provides the key, 4/25, p.66
How to keep supervisors happy, 3/7, p.38
Status symbols (for executives) termed legitimate incentives, 2/29, p.50

Induction Heating:
Automatic unit hardens trunnion bearings, 5/23, p.136
Induction heater brazes carbide tips, 2/29, p.95
Positioning a casting for induction heating, 6/13, p.156

Industrial Container Institute:
Officers, newly formed group, 5/2, p.62

Industrial Diamond Assn. of America Inc.:
Elects, B, 3/14, p.82

Industrial Diamonds:
Aid to metallographer, 2/8, p.80
Diamond reclamation, Army tech., TO, 3/14, p.93
GE reveals secret of manmade diamonds, 1/11, p.87

Industrial Distributors:
1960s forecast, 6/6, p.43

Industrial Heating Equipment Assn.:
The challenging decade-'60s, 5/30, p.41

Industrial Production Index:
FRB revises index, 1/11, p.28
FRB index up, 6/20, p.56

InFab: See Hot Working

Inflation: See Business (Economy)

Infrared:
Infrared simplifies brazing, flat sections and honeycomb panels, 5/30, p.84
Weston Infra-Ray gage sorts scrap, measures strip, 5/30, p.81

Ingot Peeler: See Steelmaking

Inspection, Testing:
Continuous fluoroscoping spots pipe weld defects, 4/11, p.96
Corrosion test for titanium cooking kettle opens market for titanium civilian application, 2/8, p.88
Damping material for reducing metal fatigue, 3/7, p.88
Hot cracking test, stainless casting, 2/8, p.81
Metal abrasives performance, 2/1, p.88
Optical device, rockets inspection through openings, TO, 5/2, p.65
Photomicrographs show quality of hot dip galvanized coating, 6/27, p.76
Thermographic fluid test of brazed honeycomb panels (Bondcheck), 5/23, p.134
Water entry test (Hyge) for missile test, 4/25, p.128

Institute of Scrap Iron & Steel Inc.:
Elects, B, 1/25, p.63; picture, 2/1, p.133

Instruments:
1980 Project: Big growth in instruments over next two decades, 6/27, p.54
Atomic reactor metal identifier

(Martin device), 1/18, p.91
Fluoroscope detects hidden bombs, 2/8, p.33
Jeweler's eyepiece used to examine new ceramic gyroscope, 6/27, p.35
Profilometer at hot mill insures quality strip, 2/15, p.128
Pyrometer, two-color radiant heat detector, 4/4, p.144 and 3/14, p.98
Temperature control: Do you really know how hot it is? 3/14, p.94
Space Age stethoscope "Radfac," 3/21, p.96
See also Gages

Insurance:
Four companies give travel insurance, 6/6, p.45

Inventories:
Are inventory practices changing? Steel industry hopes for flatter curves, 4/11, p.64
Components, 1st quarter, 1/4, p.381
Components, 2nd quarter, 4/4, p.177
Lifo users forced to liquidate inventories, tax protection sought by Illinois congressman, 3/7, p.45
Steel mill products, 2nd quarter, 2/1, p.113
Steel mill products, 3rd quarter, 5/2, p.97
Tight money won't cut inventories, buyers financing, 1/18, p.54

Inventory Control:
IBM transistorized computer, 2/1, p.34

Investment Casting Institute:
Elects, B, 1/18, p.81

Investment Firms: See Financial

Iron Ore:
Article: U. S. increases dependence on imported ore, one-third comes from abroad, 3/7, p.50
Atlantic City (Wyoming) project, Continental Divide forms backdrop, 6/13, p.141
Caland Ltd., new project, 5/9, p.125
Direct reduction "Orearb" pilot plant: Arc furnace iron competes, 1/11, p.40
Foreign competition (editorial), 3/7, p.43
Inco ore milling plant, 4/25, p.93
Iron ore pellet shipments growing (chart), 3/7, p.48
Latin ore barged to Inland Steel, 2/8, p.47
Pittsburgh Steel buys ore mine interests, 2/29, p.49
Sahara project gets World Bank loan, 4/4, p.97
Semitaconite potential, pilot plants, 3/14, p.51
Wabush Lake ore, fall shipping, 4/11, p.44

Isotopes: See Atomic Energy

J

Japan:
Buys U. S products, 6/13, p.121
Canadian ore, 2/29, p.51
Floods U. S. electronics market, 4/18, p.74
Mitsubishi contract: See Panama Canal
Transistors threat to U. S. markets, 2/15, p.83
Treasury Dept. rules no violation-Anti-Dumping Act, steel product imports, 6/27, p.33

Jet Engines: See Aircraft

Jobs:
How much energy does your job take? 6/13, p.102
Minute Man program, on-the-job productivity, 2/22, p.37

L

Labor Costs: See Employment Costs

Labor:
1960 shapes up as another troubled year, 2/8, p.45
1960 labor negotiations, how they shape up (STEEL survey), 4/11, p.53
1960 bargaining: Metalworking management rights issues, 6/6, p.53
1961 contract expirations (industries), 1/11, p.25
AFL-CIO midwinter meeting, 2/22, p.29
Capital investment per worker, NCB chart, 5/30, p.27
Collective bargaining, new era, 2/22, p.25
Education vs. occupation chart for specified levels, 5/23, p.76
Fringe costs up 200%, 2/1, p.45
IAM contract indicates labor trends, 4/25, p.54
IUE-GE: Cary to present demands, 6/6, p.53; 3½ per cent wage boost seen, 6/20, p.53
Labor force study coming, trends shown, 2/1, p.31
Labor negotiator (Ray Vacha): Professional for bargaining table, 1/18, p.62
McDonald re-opens war on rebels, 3/28, p.39
NAA pact, 6/27, p.35
Older worker, Labor Dept. study, 2/22, p.37
Pittsburgh firms score in labor contracts, 3/21, p.83
Steel labor costs spur inflation, 2/1, p.31
Steelmen applaud bargainers in cost-of-living and insurance clause, 4/25, p.54
Steel settlement: Mostly politics? 1/18, p.58
Union membership decline, 2/22, p.26
Union membership, comparison figures, 2/29, p.37
UAW charges "racketeering" employers, money taken from pay envelopes, 2/15, p.65
UAW seeks new form of profit sharing in '61, 2/29, p.49
USW: McDonald seeks ways to prevent strikes, 5/23, p.77
USW pension guarantees for job hoppers, 5/9, p.88
USW "rebel" Mamula, 4/11, p.43
USW rebels draft plant to oust McDonald, 5/16, p.41
USW rebels elected (Locals), O'Brien, Rarick, Mamula, 6/27, p.33
Whitecollar unions, how to checkmate, 2/22, p.24
Whitecollar drive readied by UAW, 6/20, p.65
Women workers, 1970 outlook, 3/14, p.38
Younger labor force, 2/8, p.45

Labor-Management:
AFL-CIO and industry meeting ok'd, 5/2, p.39
Evaluation of 1st labor-management summit meeting, 5/30, p.42
Kaiser "progress" group to study seven labor areas, 3/14, p.53
Summit Conferees named, 5/16, p.43

Laminates: See Plastics

Lead Industries Assn.:
Elects, B, 5/2, p.62
Leases space, 3/28, p.79
Lead consumption forecast, 4/11, p.46

Lead, Zinc: See Nonferrous

Leasing:
Articles:
Builder sees lease boom—initiates new, low cost plan, Jones & Lamson's Whitmore, 2/1, p.46
Equipment leasing for production efficiency, management series, 4/4, p.101
Auto fleets for iron and steel salesmen, 2/8, p.35
Bendix leases transistorized data processing, 3/21, p.86
Hertz forms equipment leasing firm, 2/8, p.35
Production equipment leasing survey, 3/21, p.84
Small firms leasing, 3/28, p.41
Verson Allsteel enters field, 4/18, p.74

Leisure Market:
Athletic Goods census report, 6/6, p.45
See also Outboard Motors

Library:
Company library use, 2/22, p.38

Lifo: See Inventories

Lithium:
New markets sought, 5/9, p.202

Lubricants, Lubrication:
Coolants at subzero keep toolweakening heat away from cutting edge, 5/2, p.66
Cutting oil recovery system, Link bearing plant, 1/18, p.90
Jukebox lubrication, 1/25, p.80
Molybdenum disulfide lube (Molykote) tailored for tough jobs, 2/1, p.94
Self-wicking lube for sleeve bearings, TO, 1/18, p.85
Solid lubricant by adding sulfide, TO, 6/6, p.97

M

Machine Searching:
Machine searching: Boon to research (ASM documentation service), 1/11, p.38

Machine Tool Industry:
1960 NMTBA expo challenges builders (Sept.), 1/11, p.82
1960 expo to have communications network, 3/28, p.40
NMTBA meets: Builders ponder pitch to Washington (world market), 5/23, p.147
Are you ready for numerical control? 3/21, p.146
Army tool obsolescence, Johns Hopkins study (ORO), 3/21, p.94; 5/9, p.102; 6/20, p.53
Builder foresees '60 boom for tape controls (Fosdick), 2/8, p.90
Builder looks at tomorrow's machines (Stugard at Cincinnati Milling), 5/9, p.157
Builder sees limit to moves abroad, 6/20, p.112
Building block setup at Gorton, 5/16, p.98
Competition with low foreign wage rates, 1/4, p.95
Equipment buying (see Production Efficiency)
Foreign competition impact (Campbell before House Appropriations Subcommittee), 5/2, p.23
Foreign plants, U. S. firms, 2/22, p.64
Lease boom foreseen, Jones & Lamson plan, 2/1, p.46
Measuring 4 in gage block, labs agree, 1/25, p.78
Metal cutting tool orders drop, 5/30, p.25
Re-equip, answer to today's challenge, 1/4, p.94
Re-equipment programs, 2/22, p.43
Re-equipment study, OCDM, 2/29, p.54
Russia outproduces West on basic machine tools, Melman-Columbia Univ. reports, 2/22, p.23
Shipments forecast '60, 1/18, p.42
Slogan for Machine Tool Expo (MMT=PE), 2/22, p.81
Standards, challenges: Cole (W&S) looks ahead, 1/25, p.66
Standards work rules aided by revolutionary production methods, 1/25, p.78
Standards, what odds for? Builders outlook at NTBA meeting, 5/16, p.44
Standardization of general purpose tools hits snag, 5/23, p.147
Tape control user (Miehle) seeks coding standard, 3/7, p.97
Trends in cutting tools aid in machining efficiency (setups may be obsolete), 4/25, p.114
Trends in grinding, Norton eyes stock removal jobs, 6/6, p.104
Used tool sales index, 2/8, p.36
Warner & Swasey research center, tool lines: Unveils product strides, 6/6, p.111
Warner & Swasey (Cole) looks ahead: Three basic changes, 1/25, p.66 and p.78
Warner & Swasey trepanning lathe, 6/13, p.162
See also Numerical Controls

Machine Tools & Attachments:
Automatic chucking lathes speed short run jobs, 5/16, p.108
Automatic cutoff saw at Ingersoll custom cuts bar stock, 2/15, p.126
Bench mounted end finishing machines speed up tube machining, 3/14, p.105
Electron beam unit (German), tool cuts, welds, 1/25, p.76
Electronic tracer controls cutting torch, 5/23, p.133
Four milling heads on machine have 700 hp for cutting, 6/27, p.81
Four slots milled in lock nuts in one pass, 6/20, p.112
Revolving trunnion machine (ferris wheel) processes camshafts at Ford, 4/4, p.157
Multispindle drill for housings, 3/7, p.88
Throwaway carbide inserts a success, 3/14, p.105
Transfer machine uses building block setup, 5/16, p.98
Trepanning lathe, 6/13, p.162

Machinery:
Business recovery (chart), 2/8, p.33
Machinery mounts move presses, 2/15, p.139

Machining:
Chrysler, shells for starter motors, 6/20, p.80
Concentricity assured in bearing seats, housings, etc., 6/6, p.104
Coolants at subzero puts new life in tools in machining high heat resistant metal alloys, 5/2, p.66
Electrical discharge machining, power unit, 4/4, p.165
Electrical machining can help you: Kane addresses management group, 4/11, p.104
Electrochem milling trims complex shapes (forgings at North American), 4/4, p.142
Factors in machining high strength steels and thermal resistant alloys, 6/27, p.89
Free machining stainless upgrades missile part, 1/25, p.69
Grinding machine takes over some machining jobs at Norton, 6/6, p.104
Hot machining cuts producibility barrier, 6/20, p.106
Hot machining (heated mandrel) forms magnesium alloy missile, 2/15, p.138
Link-Belt automatic screw machine line, chip handling, oil recovery, 1/18, p.90
Link-Belt mills four slots in locknuts in one pass, 6/20, p.112
Modified steel used in drilling rifle bores, 2/22, p.88
Multispindle drill doubles firm's output of housings, 3/7, p.88
Small mill cuts slots for digital readout system, 4/11, p.106
Spark machining joins band cutting team, 3/28, p.90
Stock removal jobs, new grinding trends, 6/6, p.104
Transfer line speeds structural fabricating, 1/11, p.70
Trepanning of beryllium speeded by new lathe, 6/13, p.162
Tube end finishing, new bench mounted machines speed deburring and chamfering, 3/14, p.105
Tungsten carbide bar saves machining costs, 2/15, p.123
Wasted handling time cut by milling parts en route (exhaust manifold castings), 3/14, p.108
See Also Numerical Controls

Magnesium:
Magnesium-thorium best formed while hot (missile cone), 2/15, p.138

Magnesium Plant:
GSA to sell Calif. property, 2/1, p.34

Magnets: See Material Handling Equipment

Maintenance:
Blast cleaner speeds maintenance chore (bus wheels), 3/28, p.102
Blast furnace lining repair, spray-on refractory, 5/2, p.81
Blast furnace stack's bell and hopper resurfaced, 4/25, p.116
Blast furnace bell overlaid with stainless beading, pic, 6/13, p.169
Editorial: New role for maintenance, 4/11, p.49
Hot patch for more heats per campaign from all-basic open-hearths, 6/27, p.94
Jet engine maintenance base (United Air Lines), 4/4, p.136
Plastic cuts repair costs on leaky pipes, 3/28, p.103
Repair shops, customer services, 6/27, p.47

Malleable Founders Society:
Contest winners, product redesign, 6/13, p.158

Management:
200 businessmen play simulated game of management marketing (Univac), 3/14, p.53
Boost the boss's productivity, too, 3/28, p.59
Directors fees, NICB survey, 5/23, p.77
Executive pirating: Professional recruiters tell you how to "keep us from stealing your executive," 4/18, p.84
Executive recruiting consultants, 2/1, p.34; 2/29, p.38
Executive recruiting, 4/25, p.53
Executive salary methods, how paid (salary plus bonus, etc.), 4/4, p.82
Financial executive demand, 1/18, p.43
How to keep employees on job, awards or demerits, 4/4, p.83
Manager of the future: Leary (Chrysler) reports, 5/30, p.27
Management Series: See Production Efficiency
Materials management seminar, 2/15, p.66
Metalworking pays more for grievance time, 4/4, p.83
Minute Man program (employee productivity check), 2/22, p.36
Personnel Dept. can spur company growth (Odiorne, U. of Mich.), 2/22, p.25
Sales managers, openings by job and salary level (comparisons), 4/4, p.81
Status symbols, incentives for potential executives, 2/29, p.50
Supervisors guide for effective discipline, 5/9, p.85
See also Labor-Management

Manufacturing:
Purdue panel, manufacturing automation, 5/16, p.61
Solved: Mach 3 manufacturing problems (Giant B-70), 1/18, p.86

Market Roundups: See Business (Markets):

Marketing:
200 businessmen tackle simulated marketing management problem (use Univacs), 3/14, p.52
AS&W exhibit: "The wonderful, wacky world of sleep" (box springs, mattresses), 4/4, p.82
American Bridge: Steel fires its marketing guns, Paddock reports, 5/23, p.95
AMA meeting: Marketing for changing world, 6/27, p.49
Customer service: Marketing your "hidden extras," 1/18, p.56
Customer service, U. S. Steel building, 5/23, p.95
Dr. Dowd: Poor marketing practices hold back exports, 5/9, p.87
Dr. Shoaf surveys equipment buying, 1/25, p.44
J&L distributors sell stainless, shift to service centers, 5/16, p.135
Marketing story behind . . . getting "them" to use bolts, 6/27, p.48
Park Drop Forge, customer SIC categories, 1/11, p.39
Plant trade show exhibits that sell, 2/1, p.51
Repair shops adopt marketing look, customer service, 6/27, p.47
Republic's stainless steel sales training (OMI), 6/13, p.103
Steelmark, industry symbol, 1/25, p.24

Massachusetts Institute of Technology:
Pegasus cast, polystyrene pattern, foam vaporization tech., 5/16, p.115

Material Handling Industry:
Conveyor industry report, 3/21, p.95
Crane-shovel industry adopts new rating method for full revolving power cranes, 3/7, p.102
Lift truck sales, trends, 4/25, p.68
Mechanized warehouse fills steel orders fast, 1/11, p.87
Mechanization boosts coke oven output, 1/18, p.94
Rocket motor cases handled with care during fabrication, 2/22, p.84

Material Handling Equipment:

Conveyors
Chrysler engine line has automatic tongs, 1/25, p.77
Coal mine conveyor, ceiling hung, 6/20, p.55
Coal conveyor, Inland plans, 2/29, p.76
Link-Belt's Indianapolis bearing plant: Automatic chip handling, oil recovery system, 1/18, p.90
Link-Belt's Indianapolis bearing plant hikes product output, 5/30, p.69
Multab transfer line speeds structural fabricating, 1/11, p.70
Proximity switch system controls pipe conveyors at welding stations, (Cypak), 2/22, p.87

Cranes, Hoists:
Hoist for oxygen jet lances, 2/15, p.128
Steel warehousing, suspended crane carriage moves trays of items to and from Christmas tree storage racks, 1/11, p.86
Magnetic piler and crane handles plates, structurals, 6/6, p.108
Turnable crane handles tubing, 6/20, p.119

Magnets:
Magnet handles cold rolled sheets, 1/25, p.72
Magnetic piler and crane handles plates, structurals, 6/6, p.108

Trucks & Trailers:
Electronics guide lift trucks through Olds warehouse, copper signal wire recessed in aisles, 6/13, p.173

Material Handling Institute Inc.:
Elects, B, 1/11, p.67

Mechanization:
The what and why of mechanization, 6/6, p.64

Melting:
Acme Steel: Cupola-converter process produces ingots, 5/2, p.74
Electron beam furnace (Calif.) 1.5 million watt, to check economy of refinement methods, 6/6, p.98
Electron beam furnace foreseen 15 million watt, refine 50 to 60 in. ingots, TO, 5/16, p.95 and 6/6, p.98
Electron beam, progress in welding, melting and machining, 4/11, p.89
Pulsating burner shortens copper melting time, 1/25, p.69
Vacuum melt for rocket designers, TO, 4/25, p.107
Vacuum melt furnace for Allegheny Ludlum, 3/7, p.40

Mercury:
Mercury checks corrosion of new copper-base alloy, 5/23, p.151
Mercury market outlook, 4/4, p.200

Mergers:
Detroit Steel-Portsmouth, 2/22, p.35
When is a merger legal? 4/11, p.60
See also Government (Antitrust)

Metal Buildings: See Construction

Metal Cleaning:
Alkaline descaling process eliminates acids, 2/8, p.94
Mechanical descaler (bars for industrial grating), 2/29, p.85
Metal finishing package deals coming? Suppliers study service extension, 2/8, p.47
Salt bath descaling, stainless steel strip, bolsters annealing-pickling line, 6/20, p.122

Metal Fiber:
How fibers are spun from metal melts, 1/11, p.74

Metal Furniture:
Industry report, 2/22, p.39

Metal Lath:
Industry report, 2/8, p.48

Metal Manufacturers Assn.:
Elects president, B, 3/21, p.134

Metal Powder Industries Federation:
Elects, B, 5/30, p.65

Metal Searcher:
ASM machine searching, 1/11, p.38
Device identifies atomic reactor metals (KAPL's Martin), 1/18, p.91

Metal Tubes:
Squeeze tubes (collapsible metal tubes), industry report, 2/15, p.79

Metallizing:
Vacuum metallizers strive for more function uses, decorative, 2/15, p.78

Metallurgical, Mining & Petroleum Engineers:
High energy forming report, 6/13, p.169

Metallurgy:
Airque V: New air hardening steel can improve wear resistance, 3/28, p.84
Beryllides studied for hi-temp, TO, 6/13, p.155
Damping test (noise and vibration) to reduce metal fatigue in structural sections, 3/7, p.88
Diamond abrasives aids metallographer preparing specimens, 2/8, p.80
Do you really know how hot it is? 3/14, p.94
Ductility of 17-4 PH, WaiMet, Armco increase, 4/25, p.127
Fibers spun from metal melts, 1/11, p.74
Gas in metals studied, 6/13, p.155
High pressure benefits, TO, 6/20, p.105
Hot cracking test for stainless, other alloys, 2/8, p.81
Hot forming magnesium missile alloys, 2/15, p.138
Hot sizing helps alloys meet closer tolerances, eliminate wrinkles, 1/25, p.70
'InFab' hot works refractory metals, 6/13, p.116
Lithium sought, 5/9, p.202
Magnesium-thorium alloys for missiles best formed while hot, 2/15, p.138
Metals coated with polar organics (octyl alcohol) fend fatigue, TO, 6/27, p.75
New "T-Metal" combines zinc with copper and titanium, 1/18, p.114
Palladium used for hydrogen purification, 6/27, p.81
Photomicrograph of cemented carbide used for ball-point pens, 6/6, p.108
Properties of sintered slip cast metals, 2/15, p.122
Rare earth markets grow (names), 5/9, p.179
Refractory metals, new arc fusion crystal growing process, 6/20, p.68
Solved: Mach 3 manufacturing problems for B-70 Valkyrie, 1/18, p.86
Stainless-bonded carbides machinable, stand up to high temp., 3/14, p.99
Superalloy forgings leap size barrier, 1/11, p.72
Superalloy springs survive brazing heat, 2/22, p.68
T-Metal (zinc alloy) challenges aluminum, copper, 1/18, p.114
Trends in metals (special study), tool steels, 4/18, p.127; editorial, p.77
Vacuum metallizers strive for more functional uses, 2/15, p.78
See (also) Powder Metallurgy and Temperature Controls

Metalworking:
A banner year ahead, managers surveyed, 1/4, p.97
$20 billion challenge, short of production efficiency, 1/25, p.43
1st half profits head for record, 2/8, p.43
2nd quarter holds key to sales prospects, 2/29, p.47
2nd half, what metalworking managers expect, 6/27, p.43
1st National City Bank of New York analyzes earnings, 3/14, p.38 and 5/16, p.41
Capital equipment purchases, '60 prospects, 1/11, p.45
How labor negotiations shape up following steel settlement, 4/11, p.53
How to diagnose your equipment needs (entropy a problem), 2/8, p.53
Metalworking look tailored for an airline, jet maintenance, 4/4, p.136

Metalworking Growth (Project 1969):
(Eddy-Rucker-Nickels study)
Electrical machinery, 6/13, p.122
Instruments, 6/27, p.54

Michigan:
Michigan defends its higher costs, 3/14, p.60
Railroads promoting Michigan, 3/28, p.41

Midwest Job Galvanizers Assn. Inc.:
Guidebook: How to tell good hot dip galvanizing, 6/27, p.76

Miniaturization:
Award winners, 3/28, p.52

Mining:
U. S. ponders atomic mining, 4/11, p.59

Minute Men: See Management

Missile Components:
Alumina for guided missile nose cones, 3/28, p.96
Aluminum extrusions make Titan skin, 2/1, p.86
Free machining stainless missile part, 1/25, p.69
Heated mandrel hot forms missile truncated cone, high temp. magnesium-thorium alloys, 2/15, p.138
Nose cones and radomes measured by Vidigage, 2/22, p.87
Silver-zinc missile battery, TO, 1/11, p.69

Missiles:
AF ICBM Minuteman contractors, 2/8, p.36
AF Skybolt program, 1/18, p.43
Army builds up tactical war muscle, Ft. Benning (ground war capability), 5/9, p.108
Astronaut training device, 4/11, p.45
NSC to build seven squadrons of ICBMs, 1/18, p.43
Rocket chambers, spotwelded, 2/8, p.84
Rocket engine for Saturn powers manned flights to moon (ABMA, Huntsville, Ala.) U. S. Saddles up its moon bound charger, 2/15, p.75
Rocket engines, plasmajet electric pilot models (Avco and GE), 4/25, p.56
Rocket motor cases handled with care during fabrication, 2/22, p.84
Sergeant, new ballistic missile, 5/9, p.108
Space timetable: Projects, who's involved, chart, 4/4, p.94
Titan base underground, steel needed, 2/1, p.43
Your stake in Defense (editorial), 5/16, p.47
See also Space Age Materials

Molybdenum: See Nonferrous

Money Market: See Financial

Motion Pictures:
CFAE film, aiding education, 6/13, p.103
Ten films, "Horizons of Science," aimed at high schools, 3/7, p.38

Motors, Generators:
Electric motor, cigarette filter size, TO, 6/20, p.105
Electrolytic generator new power source for explosive forming, 6/20, p.54
GE small gas turbine, easily transportable, 2/29, p.86
High temp. motors, TO, 2/1, p.83
Pint-size atomic generator still working, TO, 2/1, p.83
Steam generator provides water for snowbound crew in Camp Century, Greenland, 4/18, p.73
Welded stainless tubing carry gas to cool generators, 3/28, p.86

N

National Aeronautics & Space Adm.:
Avco and GE to operate pilot models of plasmajet electric rocket engines, 4/25, p.56

Budget for '61, 1/25, p.23
Astronaut training device, 4/11, p.45
Space marketing opportunities grow, main divisions, 4/4, p.94

National Assn. of Credit Management:
E. B. Moran: Interest rates to ease in 2nd half, 1/18, p.55

National Assn. of Manufacturers:
Labor costs-profits (inflation), chart, 3/21, p.85

National Assn. of Purchasing Agents:
April survey, 5/16, p.41
Elects, B, 6/20, p.99

National Assn. of Waste Material Dealers Inc.:
Elects, renamed, B, 3/28, p.79

National Conference Board:
Capital investment per worker, 5/30, p.27

National Constructors Assn.:
Elects, B, 2/22, p.65
Hoekstra exec. sec'y, 1/11, p.67
Moves headquarters, B, 4/18, p.116

National Electric Manufacturers Assn.:
Electric home heating market, 4/11, p.45

National Industrial Conference Bd.:
Directors fees, survey, 5/23, p.77
Education vs. occupation (chart), 5/23, p.76
Fringe costs up 200%, 2/1, p.45
Gainsbrugh: Industrial index for '60s, 5/30, p.55
Inflation, taxes, effect on income, 4/18, p.71

National Industrial Distributors' Assn.:
Elects, B, 6/20, p.99

National Industrial Service Assn.:
Name change, B, 2/8, p.73

National Labor Relations Bd.:
Unfair practice cases expedited, 5/30, p.40

National Machine Products Assn.:
Chairman elected, B, 6/13, p.147

National Machine Tool Builders Assn.:
Meeting: Users plug standardization, 5/16, p.44

National Metal Trades Assn.:
Elects, B, 3/28, p.79

National Office Management Assn.:
Depreciation method for office equipment, furniture, 3/7, p.39

National Safety Council:
Book instructs foremen on safety, 5/23, p.144

National Science Foundation:
Scientists and engineers, per cent in business, 2/8, p.48

National Screw Machine Products Assn.:
Elects, B, 4/18, p.114

Naval Ordnance Test Station:
Navy expert outlines ABCs of explosive metalworking, 4 ways to produce welds, 3/21, p.140

Navy:
Communications Center: Huge steel counterweights hold antenna network, 5/23, p.130
Plans radio telescope (W. Va.), 6/13, p.104

New England:
Banker challenges industry inefficiency, production equipment, 5/9, p.85
Brass mills, foreign competition, 2/15, p.73

New Products & Development:
See Product Development
See Research

Nickel:
Nickel deposition (gas tech.) turns out first-rate tools, dies, 5/2, p.78

Nonferrous:
1960 outlook: Aluminum, copper, zinc, 1/4, p.404
1st quarter earnings, 5/2, p.118
African unrest, how it can affect you, 6/27, p.144
Aluminum, 1st quarter outlook, 2/1, p.136
Aluminum, 2nd half outlook, 6/20, p.162
Aluminum prices cut, 3/7, p.150
Copper negotiations halted by local issues, 1/18, p.132
Copper supply (world), 4/25, p.162
Cuban situation: Extra electrolytic nickel placed on market by gov't averts shortage, 1/25, p.23
Cuba: Will Castro seize nickel for Reds? 5/30, p.27
Cuban nickel loss no threat, 3/14, p.158
Lead, zinc prospects look good (industry-wide article), 4/25, p.63
Lead, zinc research pays, 4/18, p.188
Lead-zinc quotas, six companies file brief, 2/22, p.124
Lead, zinc setback (import ruling), 4/11, p.148
Mercury market, 4/4, p.200
Molybdenum outlook, 5/23, p.196
Silver sales, markets, 3/28, p.134
See also Brass Mills

Numerical Controls:
A look at tomorrow's machines, 5/9, p.157
Are you ready for numerical control? (factors in planning), 3/21, p.146
How to plan for numerical controls, areas of potential benefits, 5/30, p.70
Aeronca: Programed miller keeps parts on schedule, 3/14, p.111
Boeing offers machine programing service, 5/16, p.42
Convair: Why tape control keeps growing (benefits), 6/6, p.100
Digital controlled turret lathe, TO, 1/11, p.69
Elmco, tool changer tape controlled, 5/30, p.72
Ex-Cell-O quiz panel, engineers answer questions, 2/22, p.81
Miehle seeks tape control coding standard, 3/7, p.97
Tape controls 160 variations on machining job (flywheel housing for diesels), 5/9, p.146
Tape controls contouring machine tools to short increments, 3/14, p.105
Tape control for drill jobs, '60 outlook, 2/8, p.90
Tube bending tape control (dev. of three firms), 2/1, p.98

Nylon:
Massive nylon sections produced, 2/1, p.90

Nuclear Power: See Atomic Energy

O

Office Equipment:
Chromate coat on office machines aids soldering, 4/4, p.155
Survey of depreciation methods, 3/7, p.39
Why companies standardize, 3/7, p.39

Office Trends:
Survey: Trends in Office customs, 3/14, p.37

Office of Civil & Defense Mobilization:
Executive reservists, 5/16, p.58
Machine tool re-equip program, 2/29, p.54

Ohio:
Employment lags in bellwether Ohio, 6/6, p.44

Oil Well Drilling:
Offshore drilling barge, 5/16, p.55

Orders: See Data Processing

Outboard Motors:
Evinrude cold rolls splines for propeller shafts, 5/16, p.114
Industry report, boats, motors, trailers, 2/1, p.32

Oxygen Steelmaking:
Air Products, growth in oxygen steelmaking, 3/21, p.98
Bethlehem Steel furnaces, 4/18, p.111
CF&I plant, Pueblo, Colo., 5/23, p.115
Converters basic refractory linings, materials research, 2/22, p.76
Ford technique features oxygen lance method, 5/30, p.40
French converter process produces quality steel, 2/1, p.92
How steelmakers can use oxygen safely, 2/29, p.88
L-D oxygen installation, Kaiser, TO, 5/23, p.129
Mingo Oxygen plants, B, 1/25, p.63
Wheeling Steel may replace bessemers with oxygen process, 4/18, p.111

P

Packaged System:
Control package expedites mill revamp, 3/7, p.84
Metal finishing package coming: Suppliers study service extension, 2/8, p.47

Packaging, Containers:
Aluminum can market, 4/18, p.86
Aluminum packaging markets, 4/25, p.55
Florida juice in aluminum cans? 6/6, p.45
Metals kept bright, packaging chemical protection, 5/23, p.144
Polyethylene bags package aluminum pigs and ingots, 1/11, p.28

Panama Canal:
Plymouth Locomotive vs. Mitsubishi fight for contract, Rep. Levering leads fight, 5/2, p.50
Plymouth loses contract, fights back, 5/23, p.90
Why Mitsubishi won the contract, 5/23, p.91

Pasteups: See Drafting

Pensions, Insurance:
Fringe costs up 200%, 2/1, p.45

Personnel Tests:
Help or hindrance? 6/6, p.43

Pickling: See Descaling

Pig Iron:
Merchant pig sales, 6/27, p.123

Pipe, Tubing, Fittings:
Aluminum tubing, tapered ends add strength, 3/28, p.103
Auto muffler tubes, patterned perforations, 2/22, p.80
Columbium added to steel makes pipe more weldable, 4/11, p.102 and 4/4, p.83
Condenser tubes (Fla. power plant) copper-base alloy 77 mercury corrosion check, 5/23, p.151
Plastic seals leaky pipes, 3/28, p.103
Seamless brass tubes extruded for heat exchangers, 2/8, p.93
Stainless tube annealing, atmosphere furnace, 2/8, p.82
Thin walled stainless tubes carry gas to cool generators, 3/28, p.86
Tube bender, tape control, 2/1, p.98
Tube end finishing machines, 3/14, p.105
Vanadium tubing extruded experimentally, 1/11, p.87
Welded seams of steel pipe fluoroscoped, 4/11, p.96
Welder ups output of fittings, manual electrodes, 5/23, p.144

Pipelines:
API predicts wider uses, 2/8, p.36
Concentric (3-in 1) pipeline transports molten sulfur to Grand Isle, La., 1/18, p.97
Pipe order for gas line, 2/29, p.48

Plant Expansions:
Alan Wood, 2/22, p.35
Allegheny Ludlum, 3/28, p.78
Allis-Chalmers engine plant, 3/7, p.77
Anaconda rolling mill, Toronto, 1/18, p.80
Armco modernizing Hamilton plant, 5/16, p.81
Athenia Steel Div., 6/27, p.72
Bethlehem, Lackawanna, 4/4, p.121
Bethlehem, Sparrows Point, 4/18, p.111
CF&I oxygen converters, Colo., 5/23, p.115
Dow Chemical, 2/29, p.77
Granite City Steel, 1/11, p.66
Inco ore mill, Sudbury, 4/25, p.93
Inland electrolytic tining line, coils, 5/23, p.115
J&L contracts for 118 coke oven battery, 1/11, p.66
J&L halogen type electrolytic tinning line, Aliquippa, 5/2, p.62
Midwest Steel's new Portage, Ind., plant, 6/20, p.69
National Steel contracts for $300 million project, 2/15, p.103
Ohio Seamless Tube (Copperweld), tube mills, 5/16, p.141 and 5/23, p.115
Plymouth revamps assembly plant, 1/11, p.52
Porter at Riverside Metal Wks., 5/30, p.64
Porter refractory plants at Bessemer and Wellsville, 6/20, p.93
Republic Steel, '60 capital outlay, 3/7, p.48
Scovill aluminum sheet facilities, 2/29, p.78
Steel firms, new facilities, 2/1, p.71
Wheeling Steel, Ohio plants, $3 million, 3/14, p.77 and 2/15, p.106

Plant Moves:
Kaiser's market orientation pays off, Ravenswood, 6/13, p.220
Moving to suburbs, check plus and minus factors, 3/14, p.50

Plastic Institute:
Suggested for industry, 5/23, p.78

Plastics:
Auto model building: Plastics vie for more auto jobs, 3/28, p.65
Auto uses, outlook for suppliers, 1/25, p.49
Food hauling trailer of plastic, 6/20, p.55
Glutinous plastic (urethane foam) applied as core for curtain walls, 5/16, p.104
Laminated panels, damping material affects noise and vibration for metal structures, 2/15, p.131; 3/7, p.88
Packaging jobs, 3/14, p.37
Phenolic plastic sales, 3/21, p.96
Plastic powder coating dresses up metal parts (fluidized bed coating), 3/7, p.82
Plastic valves resist sulfuric acid, 2/1, p.98
Polymer nylon shapes, 2/1, p.90
Polystyrene (foamed) pattern simplifies casting of bronze Pegasus, 5/16, p.115
Polyethylene markets, 4/11, p.46
Polystyrene patterns for shell molds, 5/9, p.140
Vinyl-metals and laminates, uses, manufacturers, markets, 2/22, p.103
Vinyl-metal laminates promoted by group, 3/28, p.42
Visten plastic film bags aid powder compacting, TO, 5/30, p.67

Plates:
1960: A better year for steel plates, 5/30, p.107

Platinum:
Demand for precious platinum metals, 1/11, p.126

Politics:
Ford (Hill): Return politics to the people, 2/8, p.35
How's your economic IQ (supervisor survey), 2/8, p.49
Industry encourages practical politics, 4/18, p.72
Republic Steel employee education program, 2/29, p.38

Porcelain Enamel: See Finishes, Coatings

Portable Air Tools:
Replacement program, 2/29, p.94

Positioners:
Mechanical positioner for casting in heat treating, 6/13, p.156

Post Offices:
$500 million market, '61 modernization program, 2/15, p.76

Powder Metallurgy:
Powdered slugs show way to better aluminum impacts, 6/13, p.161
Slip casting technique widens powder metallurgy, 2/15, p.120

Powder Metallurgy Parts Manufacturers Assn.:
Joins federation, 5/9, p.85

Power Crane & Shovel Assn.:
Adopts new rating method, 3/7, p.102

Power (Mechanical):
Transmission problem solved—by welded cluster gears, 2/22, p.72

Power Plants: See Turbines

Presses:
Flying press at warehouse cuts sheet metal, 2/15, p.124
Hip-skip press makes patterned perforations on auto muffler tubes, 2/22, p.80
Hydrostatic presses form shapes, reform properties, 4/11, p.93
Machinery mounts move presses, 2/15, p.139
See also Extrusion

Pressure Vessels:
See Gas Storage Tanks

Prices:
Aluminum producers view price squeeze, 5/9, p.86
Ferroalloy products cut, 2/1, p.115
French mill cuts prices on steel in Southwest, 2/15, p.161
Jet engine and missile prices reduced, 5/23, p.174
Molysulfide price cut, 2/8, p.113
Reductions on firebrick, tunnel diodes, 2/22, p.128
Ryerson's new quantity schedule lower prices $1 a ton, 2/1, p.114
Scrap drop, what it means, 3/7, p.47
Service Center quantity extras cut on small lots, 6/13, p.203
Steel imports, decrease, 1/25, p.92
Steel, inflation goes into orbit, 1/25, p.33
Profitless Pricing (editorial), 2/29, p.43
Zinc coated sheets, pricing revised, 6/27, p.141

Product Development:
Will your product sell? editorial, 5/23, p.81

Production:
Aluminum primary producers, 3/14, p.135
Blast furnace output '59, 2/1, p.140
Manhour output up, 2/1, p.42
Steel ingots, 1/25, p.94; 2/22, p.110; 3/21, p.213; 4/25, p.144; 5/23, p.180
Steel ingot rates compiled by AISI (chart), 3/7, p.129
World steel, 2/29, p.51; 6/13, p.121

Production Efficiency:
American metalworking industry lag in production efficiency, how to get it, 1/4, p.93
Boost the boss's productivity too (Collison cites danger signals), 3/28, p.59
Editorial: Lesson in efficiency (foreign competition), 6/20, p.59
Editorial: New role for maintenance, 4/11, p.49
Editorial: Mobilize for efficiency (better equipment), 1/25, p.29
Minute Man (TRW program): Minute saved is production earned, 2/22, p.36
The what and why of mechanization, Bill Worker produced in (1930, 1960, 1970), 6/6, p.64

Production Efficiency (Management Series):
1. $5.65 billion for capital equipment purchases, 1960 metalworking prospect, 1/11, p.45
2. $20 billion challenge (deficit) 1/25, p.43
3. How to diagnose your equipment needs (entropy-five dangers of industrial cancer), 2/8, p.55
4. How to organize to buy equipment (management team), 2/22, p.43
5. How to sell it to the boss (return on investment), 3/7, p.59
6. How to find the money for it (equipment financing), 3/21, p.103
7. Four ways to get it—when capital is limited (lease, rebuild, used equipment, contracting out), 4/4, p.101
8. Depreciation reform—others get it, why not us (world systems), 4/18, p.91
9. Fight for it with depreciation reform (STEEL's plan), 5/2, p.43
10. How to engineer for it, 5/16, p.61
11. How to pick the vender, 5/30, p.45
12. How to sell it to labor (manpower productivity), 6/6, p.64
13. How it pays off (sales success), 6/20, p.75

Production Processes:
AC Spark Plug's Production Engineering Team: Unraveling production snarls, 5/16, p.54
Balancing machine for new parts speeds design, production, 1/25, p.76
See Data Processing
See Fabrication & Assembly

Profits: See Financial

Project 1980: See Metalworking Growth

Psychology:
Dr. Edwards: Using man's capabilities, 5/23, p.77
Three moves counteract fear (equipment buying), 1/25, p.45

Pumps:
Hydraulic pump at Ford's Tractor & Implement Div.: Quality-design team cuts product costs, 3/7, p.98

Purchasing Agents:
Chicago survey, 1/25, p.26
NAPA foresee uptrend, 2/8, p.33

Purdue University:
Panel on manufacturing automation, 5/16, p.61

Q

Quality Control:
Ford-Tractor & Implement Div.: Quality-design teams cuts hydraulic pump costs, 3/7, p.98
Frankel Co.: Scrapman's apothecary shop, 4/25, p.74
GM: Reliability concept is step beyond quality control, 2/29, p.80
National Tube: Continuous fluoroscoping spots weld defects, 4/11, p.96
Profile check at hot mill insures quality strip, 2/15, p.128

Quenching:
Quick die quench shatters forming bottleneck, 2/15, p.134

R

Radiant Quartz Lamps: See Brazing

Radioisotopes: See Atomic Energy

Radio, Television:
Electronic ear tunes in faint radio signals from outer space, 4/18, p.83
Navy antenna (Maine communications center): Huge steel counterweights guard spidery network, 5/23, p.130
Navy plans radio telescope (W. Va.), 6/13, p.104
Radio size of matchead possible, TO, 6/6, p.97
Sarnoff (RCA) predicts four TV breakthroughs, 3/21, p.83
Wall television (transistors), 4/18, p.74
See Also Steel Mill Controls

Railroads:
Articles:
1. Rail dilemma hurts you too, 5/2, p.36
2. How the railroads help themselves, 5/9, p.98
Diversification sought, 2/15, p.74
Wage boosts, tackle work rules, 6/13, p.101
Pressure poured billets for railroad wheels, 3/7, p.90
See Also Freight Cars

Rail Steel:
Markets outlook, 6/6, p.135

Rare Earths:
Rare earth markets grow (names), 5/9, p.179
Uses mounts, 2/22, p.87

Real Estate:
Loan money easier, interest rate, 5/9, p.85

Reclamation:
Aluminum oxide retrieved from coal mine waste, 6/6, p.64

Recovery Units:
Automatic chip handling, oil recovery system, 1/18, p.90

Recruiting: See Management

Recuperators: See Steelmaking

Refractories:
Basic refractory linings for oxygen converters, research, 2/22, p.76
Blast furnace repaired with spray-on refractory, 5/2, p.81
Hot patch system for openhearths, 6/27, p.94
Openhearth roof refractories hung from steel framework supported by coil spring system, 6/6, p.106
Tar bonded refractory for lining oxygen vessels, TO, 5/16, p.95

Refractory Metals:
Arc fusion crystal growing process to produce refractory metals (Linde), 6/20, p.68
'Infab' hot works refractory metals, 6/13, p.116

Reliability:
Anyone for Better Reliability? editorial, 4/25, p.59
Reliability concept is step beyond quality control (GM-Skinner), 2/29, p.80
Ryan Industries: Tankmaker builds on foundation of product reliability, 5/16, p.96

Remote Control:
GE transistorized supervisory system, 6/6, p.115
Inland sinter plant co-ordinated from master control room, 5/16, p.110

Repair Shops:
Customer service centers, 6/27, p.47

Research:
23 lb turbojet engine unveiled, 1/25, p.25
August Thyssen technical center and chemical lab, 6/6, p.44
Machine searching, ASM reference material, 1/11, p.38
Nuclear lab (Westinghouse) installs rolling mill, 2/22, p.71
RCA exec. sees merger of science and engineering, 3/7, p.39
Refractory lining materials for oxygen converters, 2/22, p.76
Scrap research, Luria Bros., 2/15, p.159
Suggested: Private spending for basic research by creating industrywide institutes, 1/18, p.44
U. S. Steel center revamps rolling mills, Monroeville, 3/14, p.102
U. S. Steel opens Electromechanical Engineering Bldg., new markets, 5/23, p.95

Resistance Welder Manufacturers Assn.:
Industry report, 2/1, p.32

Retirement:
Mandatory age upped, 4/25, p.55

Riveting:
Departure from custom speeds up riveting line (Western Electric rivet setting line), 3/28, p.88
Russians weld rivets with coated electrodes (join structurals with rivet welding), 4/11, p.100

Roads: See Highways

Rockets: See Missiles

Rolling Mills:
War plant for sale (Gary armor plate plant), 2/29, p.49
Monroeville-U. S. Steel revamps rolling mill (controls), 3/14, p.100
Westinghouse nuclear lab installs rolling mill, 2/22, p.71

Russia:
Basic machine tool output larger than western countries, 2/22, p.23
Electrical power lag, 2/15, p.66
Reds snare more Free World trade, 2/29, p.51
Russians weld rivets with coated electrodes, 4/11, p.100

S

St. Lawrence Seaway:
All-American canal suggested, eliminate bottlenecks in Welland, 3/7, p.40
Apr. 15 opens new season, 3/14, p.38
Scientists see water route open all year, "bubbles" use, 4/25, p.54
Six ways seaway can help you save, 3/7, p.52

Safety:
How steelmakers can use oxygen safely, 2/29, p.88
Safe firms tell how to pare perils, 6/13, p.114
Seven foundries prove safety can be perfect, 3/28, p.62

Salaries:
Average salary for graduates, accountants, engineers, bachelor and master degrees, 4/18, p.82
Executives, basis of salary plus bonus, 4/4, p.82
Sales managers, job openings, 4/4, p.81

Sales Programs: See Marketing

Salesmen:
Armco: Realistic sales training pays off, 4/11, p.56
Athletes, good salesmen? 5/9, p.87
Breakdown of openings by job and salary level, chart, 4/4, p.81
Colson Corp.: Salesmen sell first, train later, 4/4, p.97
Maytag (Fred), phone salesman, 5/23, p.77

Saws: See Cutting, Shearing

Scales, Weighing:
Electronic scale systems weigh open hearth charge, 6/13, p.164

Scientists:
Merger of science and engineering forecast, 3/7, p.39
Movies aimed at high school, "scieneers", 3/7, p.38

Scrap:
Await Battelle standards report, 6/27, p.34
Automatic chip handling, 1/18, p.90
Consumption of purchased scrap, 1/11, p.41
Consumption, 3rd quarter, 6/27, p.140
Feeder, scrap separator ups salvage profit, 2/29, p.95
Frankel Co.'s apothecary shop (processes exotic scrap metals into "Vitamet"), 4/25, p.74
How to get the most out of your scrap, disposal program, 2/15, p.84
Luria ties scrap's future to research, 2/15, p.159
What the scrap price drop means, 3/7, p.47

Sealing:
Plastic seals leaky pipes, 3/28, p.103

Service Centers: See Warehousing

Service Contracts:
Metal finishing, package deal with suppliers, 2/8, p.47

Sheet & Strip:
Flying press in warehouse cuts sheet metal, aid to small companies, 2/15, p.124
Galvanized sheet, demand, 1/25, p.90
Galvanized welding barrier hurdled by Ford, 2/22, p.49
One-coat enameling sheet (scoreboard), 6/20, p.139
Profilometer at hot mill insures quality strip, 2/15, p.128
Sheets graded, stacked automatically on coil fed sheeting lines (English sorting machine), 5/16, p.106
Titanium sheets rolled flatter, better strength-to-weight ratio, 4/4, p.138

Shells:
Chrysler processes shells for starter motors, 6/20, p.80
Glass lined water heater shells automatically welded, 6/20, p.116
Inland makes drum shells automatically, 5/23, p.132
Special traveling gantry welds missile shells, 3/28, p.96

Shipments:
Aluminum wrought products by class., 5/9, p.86
Barrels, drums, 3/14, p.153
Drawn wire shipments, 4/18, p.165
Finished steel distribution by market class. for 1959, 4/11, p.124
Finished steel, 1st quarter, 5/16, p.141
Iron ore pellets, 3/7, p.48
Steel plates, 5/30, p.107

Ships, Shipping:
Automated merchant ship, Norden contract, 5/16, p.58
Fishyback daily service (Detroit-Cleveland), 5/16, p.43
Iron ore fleet, Great Lakes, number and capacity, 5/23, p.199
Nautical "blast off", explosive kit around mooring cables, 5/30, p.26
Waterborne commerce, '59 tonnage, 5/23, p.78
Wilfred Sykes, 1st season ore haul, 4/4, p.84

Shopping Centers:
Reynolds sets up 18 "one stop shopping centers" for building products, 4/4, p.82

Shot & Grit: See Abrasives

Silicon Steel:
Annealing setup of grain oriented silicon, GE plant, 5/16, p.102
Inland steel plant, master controlroom, 5/16, p.110
Tungsten ingots produced by indirect sintering, 1/25, p.72
Outdoor sintering furnace, La., 5/9, p.154

Slitting:
Automated slitting, welding improve industrial grating, 5/16, p.100

Small Business:
SBIC: Funds available, what investment firms look for, 5/9, p.100

Smelters, Refineries:
Alcoa smelter, Warrick, Ind., 1/25, p. 26; yearly capacity, 4/4, p.84
Alcoa potline at smelting works restarted, 2/1, p.33
Kennecott opens copper refinery at Baltimore, 1/30, p.41

Smoke-Smog:
Health service looks at auto smog, 3/7, p.54

Society for the Advancement of Management:
Sponsor simulated management problem, 200 businessmen play game, Univacs used, 3/14, p.52

Society of Aircraft Materials & Process Engineers:
Forms Aerospace group, 5/2, p.62
Symposium, space engineers, 3/21, p.96

Society of Automotive Engineers Inc.:
Elects president, 1/18, p.81
Feddersen reports space age forming processes, high energy rate, 4/25, p.108

Society of Mining Engineers:
Installs officers, B, 2/22, p.65

Society of the Plastics Industry:
Promote vinyl-metal laminates, 3/28, p.42

Solar Power:
Solar power device for spacecraft, "Sunflower I", TO, 6/20, p.104
Thermoelectric unit, 2/29, p.59

Soldering:
Chromate coating office machines solves tarnish problems, 4/4, p.150

Sonic Cleaning:
Swing and sound clean exhaust gas filters, 2/8, p.86

Sorting Machine:
Sheets graded, stacked automatically, English machine, 5/16, p.106

South America:
Argentine firm to get Gary armor plate mill, 4/11, p.59
Common market formed, 2/29, p.51

Space Age:
Bottle-size jet engine to propel satellite, 5/23, p.144
Chart timetable: Projects, who's involved, space marketing opportunities grow, 4/4, p.94
Electronic ear tunes in faint radio signals from outer space, 4/18, p.83
How you can use high energy rate forming, 4/25, p.108
Manned spacecraft designs hit preproduction phase, 3/21, p.96
Mars in three months? 2/1, p.34
Nuclear powerplant in orbit by '70, 4/11, p.43
Re-entry study with down-to-earth hypersonic testing, TO, 6/6, p.97
Saturn's booster, huge rocket engine for manned flights to moon, 2/15, p.75
Solved: Mach 3 manufacturing problems, B-70 bombers, 1/18, p.86
Space vehicle (hypothetical) pic., NASA scientist's views, 1/4, p.114
Space vehicles concept unveiled by Boeing, pic., moon colony, 5/9, p.87
Supersonic air travel predicted, 4/25, p.56
Weather satellite Tiros, 5/9, p.86
See also Missiles

Specification:
Carbon structural steel: ASTM expected to adopt spec upping yield strength, 6/27, p.92

Spinning:
How fibers are spun from metal melts, 1/11, p.74

Spline Forming:
Rolling boosts spline production (propeller shaft for outboard motor), 5/16, p.114

Spring Wire:
Superalloy springs survive brazing heat, 2/22, p.68

Stainless Steels:
410 stainless shafts for cold rolling splines, 5/16, p.114
Boron added to 304 stainless, for nuclear alloy, 5/16, p.112
Color-coated steel on way, 4/11, p.54
Cracking test, 2Y8, p.81
Free machining for missile part, 1/25, p.69

Stampings:
Auto muffler tubes, patterned perforations, 2/22, p.80
Contract stamping firms, outlook, 4/11, p.58
Fisher 'stamps' wire seat frames, 4/11, p.69
Ford-Compacts: Spotwelded galvanized sheets, 2/22, p.49

Status Symbols: See Incentives

Steel Alloys:
Auto use, carburizing steel, 4/4, p.108
Clad steels, new markets, 6/6, p.56
Columbium (GLX-W) added to steel makes pipe more weldable, 4/11, p.102 and 4/4, p.83
Construction steels, extra strong, 6/13, p.198
Double carbide for bandsaw blades, 4/25, p.127
Modified steel type for drills, 2/22, p.88
New air hardening steel (Braeburn Airque V) can improve wear resistance, 3/28, p.84
New wear resistant steel (Carpenter Hi-Wear 64) is easy to heat treat, 1/18, p.100
Steel choice for truck bodies, high strength, 2/1, p.97
Tough steel features high strength-to-weight ratio (USS Strux) for aircraft-missiles, 1/18, p.96
Wear resistant steel new (Carpenter Hi Wear 64) easy to heat treat, 1/18, p.100
See also Tool Steels

Steel Consumption:
Construction equipment, 4/18, p.72
Construction industry, 3/21, p.207
Mobile homes, 6/20, p.55
Railroad boxcars, 5/2, p.36
Road building, 2/1, p.42
Underground missile base, 2/1, p.43

Steel Industry:
3rd quarter predictions, White, Glossbrenner, Johnston, 5/23, p.75
AISI compiles district ingot rates, 3/7, p.129
AISI stresses steel's competition, domestic and foreign, 5/30, p.38
Extra strong construction steels, industry report, 6/13, p.197
How labor negotiations shape up for metalworking following settlement, 4/11, p.53
Impact of foreign competition, 5/2, p.23
Steel fabricators ponder plight, cutthroat competition, 6/13, p.111
Steelmakers market new enameling (scoreboard), 6/20, p.139
Why steelmaking rate dropped, 4/18, p.81
Youngstown area problems, 6/20, p.63
See also Capacity, Foreign Trade, Shipments, Warehousing & Distribution

Steel Settlement:
Highlights of terms, metalworking reaction, 1/11, p. 36 and 37
How costs of settlement break down, metalworking looks for salvage, 1/18, p.51
Will prices be forced up, 1/11, p.101
What settlement means: Banner production year, more inflation, 1/11, p.35
What settlement really means to you STEEL editors, 1/25, p.33

Steelmaking:
Blast furnace bell, hopper hard surfaced by welding, 4/25, p.116
Continuous fluoroscoping spots pipe weld defects, 4/11, p.96
Converters may spur use of electric soaking pits developed in Norway, 5/23, p.138
Cupola-converter process produces ingots at Acme, 5/2, p.74
Degassing method used for large or small heats (Dortmund Horder Huttenunion vacuum treatment), 1/11, p.78
Electronic scale system weighs open hearth charge, 6/13, p.164
Ford technique hikes open hearth output, improvement in oxygen lance method, 5/30, p.40
French converter process produces quality steel, 2/1, p.82
GE vertical annealing furnace: New furnace boosts bright anneal output, 5/9, p.148
Hoist for oxygen jet lances, 2/15, p.128
Ingot peeler (Italian hot milling machine), is it practical in American steelmaking? 1/25, p.74
Jessop: Modern methods, machines update small plant, 6/27, p.84
Mechanization (material loading) boosts coke oven output, 1/18, p.94
Natural gas subs for coke in blast furnace, tests, TO, 1/18, p.85
Oxygen process gets boost from refractory research, 2/22, p.76
Oxygen safety rules, how steelmakers can use, 2/29, p.88
Pouring costs, research, 3/15, p.137
Pouring ingots: Big end down molds boost alloy steel yield, 3/28, p.92
Pressure poured billets: Shortcut for steelmakers? 3/7, p.90
Pressure pouring controlled, 2/29, p.37
Profile check at hot mill insures quality strip, 2/15, p. 128
Recuperators preheat soaking pit air, 6/13, p.166
Sinter plant (Inland) co-ordinated from master controlroom, 5/16, p.110
Spring suspension cuts roof brick wear, 6/6, p.106
Steel research center revamps rolling mills (U. S. Steel), 3/14, p.102
Structural mill debuts, U. S. Steel South Wks., 5/30, p.76
Swing and sound clean exhaust gas filters, 2/8, p.86
Television (shearman's booth) tells I-beam length, Eastern rolling mill, 6/20, p.114
Two color pyrometer tells correct temperature, measures ratio of radiation, 4/4, p.144
Ultrahigh pressure stack boosts hot metal output, 3/21, p.148

Steel Mill Controls:
Computer aids in design of gale velocity furnace at Surface Combustion, 2/1, p.84
Computer control for Great Lakes hot strip mill, 2/8, p.46
Control rooms (ready made), package expedites mill revamp, 3/7, p.84
Profilometer at hot mill insures quality surface, 2/15, p.128
Sinter plant co-ordinated from master controlroom, 5/16, p.110
TV camera, shearman's control booth, Eastern rolling mill, 6/20, p.114
TV monitor speeds tin strip in experiment at U. S. Steel, 6/6, p.118

Steel Mill Products:
2nd quarter inventory forecast, 2/1, p.113
Imports, 1st quarter, 6/13, p.101
Foreign competition, 5/2, p.25

Steel Mills:
52 yr old blooming mill sets production records, U. S. Steel, 2/8, p.35
Argentine firm to get Gary armor plate mill, 4/11, p.59
Bethlehem slabbing mill, 4/4, p.121
Ceco structural mill, Ochiltree Works, 6/6, p.83
Florida mill, Miami, 6/13, p.101
Midwest Steel, Portage, Ind., 6/20, p.69
Montana (Webb & Knapp) plans, adjacent to Anaconda, 5/30, p.27
Philippine plant, U. S. businessmen battle to build, 3/7, p.38
Rodney Metals, Sendzimir mill, B, 2/8, p.72
U. S. Steel (Monroeville research center) revamps rolling mills, 3/14, p.102
U. S. Steel plate mill, Gary, 4/4, p.124
U. S. Steel structural mill automated, 5/30, p.76
Washington state mill foreseen, 6/20, p.56

Steel Service Center Institute:
Stewart outlines 1969 objectives for service center managers, 5/16, p.56

Storage:
Programed storage line, cars at Chevy's Janesville plant, 5/30, p.85
Steel warehouse orders: Edgcomb vertical storage, mechanized material handling, 1/11, p.86

Storage Tanks:
Cryogenic storage tanks for liquefied gases, 5/16, p.96

Structural Steel:
ASTM expected to adopt spec upping yield strength, 6/27, p.92
Carbon structural steel specs, 6/27, p.92
Clad metals move into new markets, 6/6, p.56
Changes in design (lightweight beams) aid flatbed trailers, 3/14, p.100
Extra strong construction steels, industry report, 6/13, p.197
Material fights vibration, damping qualities, 2/15, p.131
Rivet welding, Russian method, 4/11, p.100
Structural steel fabricators, cutthroat competition, 6/13, p.111
Transfer line speeds structural fabricating, 1/11, p.70
Urethane foam, plastic core for panels, 5/16, p.104

Suburbs: See Plant Moves

Supermarkets:
Cartveyor, TO, 2/29, p.79

Supervisors: See Management

Surface Treatment:
See Finishes, Coatings, Paints

Surfacing:
Blast furnace bell, hopper hard surfaced by welding, 4/25, p.116

Survey:
Money market: Tight money won't cut inventories, 1/18, p.55
Michigan defends higher costs (Upjohn Institute study), 3/14, p.60
Western Reserve Univ.: Equipment buying, 2/22, p.43; production efficiency-how to sell to boss, 3/7, p.57

Symbols:
Status symbols (for executives) termed legitimate incentives, 2/29, p.50
Steelmark, industry symbol, 1/25, p.24

T

Taxes:
Cresap (Westinghouse) urges Curtis Bill changes (research), 3/7, p.37
Double paycheck deductions, 6/13, p.102
Lifo bill status, 5/2, p.39
Lifo inventory protection tax, Illinois survey, 3/7, p.49
Michigan defends higher costs (Upjohn survey), 3/14, p.60
Tax deferral forecast for overseas investment, 4/25, p.55
See also Depreciation

Technical Information Center:
ASM service selector, 1/11, p.38

Television: See Radio, TV

Tellurium:
Ample supply, 4/18, p.188

Temperature Control: See Instruments

Texas:
Lack of water limits economic growth, 6/13, p.117

Thermoelectricity:
Blanchard (A. O. Smith) predicts, 3/7, p.37
Commercial thermoelectricity units, Westinghouse, 2/8, p.83; predicted usage, 1/11, p.69
Four new power concepts to watch (refrigerator and power sources), 3/28, p.49
Get set for the shock of thermoelectricity (products), 2/29, p.57
Neelium, new alloy, 6/13, p.160
Refrigerator passes test (Westinghouse), 4/25, p.55
Russians build thermoelectric generator, 3/14, p.48
Thermoelectric cooling modules, commercial supply, 2/8, p.83
Thermoelectric unit, 2/29, p.58
Thermoelectric generator (Navy) experiment, 5/23, p.78

Tin Plate:
Tin mill products, industry report, 3/28, p.113
U. S. Steel reveals thinner tin plate, 5/2, p.39

Titanium:
Corrosion test of titanium cooking kettle opens civilian markets, 2/8, p.88
Davy Crockett (Army nuclear gun) to take 2 million lb titanium, 5/16, p.42
Flatter sheets increase titanium's usefulness, 4/4, p.138

Tool Steels:
A special study: Tool steelmakers shoot for new markets, 4/18, p.127
Chill puts new life in tools (subzero coolants keep heat away from cutting edge), 5/2, p.66
Double carbide material for bandsaw blades, 4/25, p.127
Hot sizing helps alloys meet closer tolerances, 1/25, p.70
New materials up metal cutting efficiency, 4/25, p.114
New tool steel selector program aids warehousers and users, 4/25, p.118
New air hardening steel can improve wear resistance (Braeburn Airque V), combines carbon and vanadium, 3/28, p.85
New wear resistant steel is easy to heat treat (Carpenter Hi Wear 64) combines tungsten monocarbides, carbon, 1/18, p.100

Tools & Dies:
Die repair, dot welding, 1/18, p.89
Heated mandrel, hot forming magnesium missile alloys, 2/15, p.138
Nickel deposition process turns out first-rate tools, dies, 5/2, p.78
Quick die quench, 2/15, p.134
Steel rule dies bid for 'long run' status, 5/9, p.158

Tools (Cutting):
Ceramic tool growth, 6/13, p.161
Coolants at subzero extend tool life, 5/2, p.66
Bandshaws made of new alloy, reduces cutoff time, 4/25, p.127
Carbide inserts success, throwaways, 3/14, p.105
Machining efficiency aided by new cutting tools, 4/25, p.114
Machinable carbides stand up to 1650° F, stainless steel binders, 3/14, p.99
Tungsten carbide bar, 2/15, p.123

Tools (Hand):
Hand air tool replacement program (Clow & Sons), 2/29, p.94
Hand tool costs too high? 2/22, p.70

Trade Shows: See Marketing

Transmissions:
Welded cluster gears solve transmission problem, 2/22, p.72

Transistors:
GE transistorized system, supervisory control of remote operations, 6/6, p.115
Gold-antimony alloy for transistors, 2/15, p.123
Import battle, EIA, 3/21, p.85
IBM transistorized computer, 2/1, p.34
Tiny work horses (silicon wafers) promise cheaper conversion of dc to ac, 4/4, p.140

Transportation:
Commerce's report to White House, 3/21, p.100
Commuting system, artist's conception, 6/13, p.102
French introduce monorail, 4/25, p.73

Trucks, Trailers:
Choice of steel for truck bodies, 2/1, p.97
Double-bottom trucks on turnpikes, 1/18, p.44
Flow designed castings for new tractor series, 3/21, p.156
Pushbutton, gearless tractors, TO, 4/25, p.107

Tube Benders:
Numerical control bends tubing into tail pipes, 2/1, p.98

Tubing: See Pipe, Tubing

Tungsten:
Tungsten ingots, indirect sintering, 1/25, p.72
Tungsten ore mill plan, British-Columbian-Yukon border, 2/1, p.43
Wear resistant alloy, 1/18, p.100

Turbines:
Automatic braze, Westinghouse, 3/21, p.162
Contractor foresees wheel motors, gas turbines hauling earthmoving equipment, 4/18, p.73
New Zealand: Thermal jets power turbines (hot water) in "Valley of Steam," 6/27, p.53
Small gas turbine can do big jobs (GE), 2/29, p.86
Telemetry, data recording, 4/18, p.71

U

Ultrasonics: See Cleaning, Blasting

Upjohn Institute for Employment Research:
Michigan defends its higher costs (wages and taxes), 3/14, p.60

Uranium:
AEC depleted supply for civilian applications: Wanted—New jobs for uranium, 6/20, p.123
AEC sale price, TO, 4/11, p.87
Domestic production, 2/8, p.34
Uses sought for depleted uranium, 2/15, p.130

Usership:
Contest details, 2/29, p.38

V

Vacuum:
Degassing method (German vacuum treatment used at Crucible, 1/11, p.78
See also Melting

Vacuum Metallizing:
Industry report: Metallizers strive for more function uses, 2/15, p.78

Valves:
Plastic valves resist acid, 2/1, p.98

Vanadium:
Vanadium tubing extruded experimentally, 1/11, p.87

Venders:
Equipment venders, how to pick (production efficiency), 5/30, p.45

Vibration:
Material flights vibration: Laminated construction provides damping ability, 2/15, p.131 and 3/7, p.88
Swing and sound clean exhaust gas filter bags, 2/8, p.86
Vibration equipment solves deburring problems at National Cash Register, 5/2, p.70

W

Wages:
1959 wages rise 9 cents, 2/8, p.45
Comparison of hourly earnings industrywide, steelworkers best paid, 4/25, p.55
Foreign competition, differential in wage rates, 5/2, p.25, 26
Steel increases (1949-1958), 1/11, p.35
Steel hourly payroll, 1st four months, 6/27, p.33
U. S. Steel attacks wage inflation (relation employment costs to inflation), 3/21, p.97

Warehouses:
Electronically guided trains move parts through warehouse (copper signal wires), 6/13, p.173
Flying press in warehouse helps small companies (cuts sheet metal), 2/15, p.124
New tool steel selector program aids warehousers and users, 4/25, p.118
Steel orders filled fast in mechanized warehouse (Edgcomb vertical storage and mechanized material handling), 1/11, p.86

Warehousing & Distribution:
1960 objectives for service center managers: Distributors step up modernization (Stewart, pres. SSCI), 5/16, p.56
Finished steel distribution by market class, autodom again No. 1 customer, 4/11, p.124
J&L shift to service center distribution of stainless, 5/16, p.135
Steel service centers shoot for full stocks, 1/25, p.25

Wastes:
Cyanide incineration reduces toxic risks, 2/8, p.93

Water:
Commerce study points up shortages, 6/20, p.55
Mahoning Valley shortages, problems, 6/20, p.64
Texas shortages, problems, 6/13, p.117
Year 2000: Water needs forecast, 2/8, p.35

Weapons:
Davy Crockett nuclear gun, 5/16, p.42, 47

Weather Satellite:
Fabricating the Tiros, 5/9, p.86

Welding Equipment:
Makers to push fight on costs, 4/11, p.88

Welding (Arc):
Arc fusion crystal growing process to produce refractory metals, 6/20, p.68
Automatic tracer welding system (auto frames), 1/18, p.97
Blast furnace bell, hopper hard surfaced by welding, 4/25, p.116
Lathe bed makes ideal welder base (for atomic reactor assembly), 2/29, p.90
Russians weld rivets with coated electrodes, 4/11, p.100
Semiautomatic (Unionarc) welds large pipe and fittings, 5/23, p.144
Temco: Joins tanks automatically at 175 ipm, without flux or shielding gas (glass lined water heaters), 6/20, p.116
Vertomatic (electroslag machine) continuous, one-pass welder for heavy plate, 1/18, p.101
Weld time cut 60 per cent, switch from manual to semi-automatic system (oil tanks), 4/4, p.150

Welding (Electron Beam):
B-70 welds 20 to 30 ft planned, TO, 6/13, p.155
Hamilton Standard tool cuts, welds (German dev.), 1/25, p.77
Progress report, 4/11, p.89, 90
Sciaky Bros.: Electron beam welding nears production level, 5/23, p.150

Welding (General):
B-70 bombers, manufacturing problems solved, 1/18, p.86
Special traveling gantry welds missile shells, 3/28, p.96
Special machine welds and assembles (auto oil filter cartridges), 6/13, p.173
Welders see uptrends in CO_2 semiautomatic processes this year, 4/11, p.90

Welding (Resistance):
Die repair time reduced by dot welding (new tech.), 1/18, p.89
Flash buttwelds in aluminum safe, reliable (Lockheed report to Air Force), 3/14, p.110
Ford compacts, galvanized sheets spotwelded, 2/22, p.49
Transmission problem solved—by welded cluster gears, 2/22, p.72
Wrap method strengthens rocket chambers, paper-thin steel and precision spotwelding, 2/8, p.84

Welding (Ultrasonic):
Ultrasonic welding can improve joints in dissimilar metals, 2/8 p.78

Welding Research Council:
Seeks corrosion examples, 6/13, p.173

Welds:
Explosive metalworking: 4 ways to produce welds, 3/21, p.140

Western Reserve University:
Survey Cleveland firms on equipment buying programs, 2/22, p.43; production efficiency, 3/7, p.57

Whitecollar Unions: See Labor

Wire:
Flat weld wire better than round? 6/27, p.93
Manufacturers' wire, markets, 4/18, p.165
Superalloy spring wires survive brazing heat, Natl-Stan., 2/22, p.68
Welded wire fabric: How an industry is helping itself, 6/20, p.66
Wire rope, market survey, 5/23, p.173
Wire seat frames stamped at Fisher Body, 4/11, p.69

Work Simplification Programs:
Ideas by manufacturing supervisors, 2/29, p.38, p.53

World Fair:
Hanover, Germany, site of World Industry Fair, 6/13, p.121

X-Y-Z

X-Ray:
Fluoroscoping spots pipe weld defects, 4/11, p.96
X-ray gains in process control, 2/8, p.92

Youngstown:
What's with Youngstown? How the area is fighting problems, 6/20, p.63

Zinc:
More zip for zinc, Hydrometals' new T-Metal, 1/18, p.114
Zinc bodyguard (galvanized coat) resists corrosion (transmission line pic), 2/1, p.96

COMPANY INDEX

A

Acme Mfg. Co.:
Buffing units, IE, 2/8, p.103; 2/15, p.143; 6/20, p.128
Deburring machine, IE, 5/9, p.161

Acme Steel Co.:
Blooming mill installed, B, 5/9, p.131
Capital spending plans, 4/11, p.82
Cupola-converter melting produces ingots, 5/2, p.74
USW-Acme sign pact, 2/1, p.43

Acoustica Associates Inc.:
Expands plant, B, 4/25, p.93

Acro Welder Mfg. Co.:
Force welding unit, IE, 2/15, p.149

Addressograph-Multigraph Corp.:
Markets equipment service, 6/27, p.47

Adolph Plating Inc.:
Buys United Plating, B, 3/7, p.78

Aeronca Mfg. Corp.:
Buys United Welding, B, 6/27, p.73
Numerical control keeps production rolling while forming new tools, 3/14, p.111

Aeroprojects Inc.:
Potthoff: Ultrasonic welding joins dissimilar metals, 2/8, p.78

Air-Maze Corp.:
Electronic precipitator, IE, 5/9, p.168

Air Products Inc.:
Company growth: How Air Products thrives on oxygen, 3/21, p.98
Cryogenic plant, B, 4/11, p.82

Air Reduction Sales Co.:
Air separation plant, Fla., 2/29, p.77,
Cutting machine, IE, 1/25, p.81
Dedicates plant, Ala., 3/28, p.79
Liquid air separation plant, Calif., 3/21, p.131
Manual welding gun uses CO_2 shielding gas, IE, 1/25, p.82

Ajax Electric Co.:
Heating radiation furnace, IE, 1/4, p.368
Isothermal heat treating furnaces, 6/6, p.118

Ajax Magnethermic Corp.:
Induction heater-automatic indexing, IE, 3/7, p.120

Alan Wood Steel Co.:
Expansion program, 2/22, p.35

Albi Mfg. Co. Inc.:
Forms mold cast div., B, 4/4, p.126

Albion Malleable Iron Co.:
Merges Muncie Malleable, B, 2/22, p.65

Alco Products Inc.:
Opens lab, 2/29, p.76
Skid assembly for reactor, Arctic center, 4/4, p.81
Spring facility, B, 6/27, p.73

Alkon Products Corp.:
Multispindle drill doubles output of housings, 3/7, p.88

Allegheny Ludlum Steel Corp.:
Big end down ingot molds (pouring practice) boost alloy steel yield, 3/28, p.92
Building vacuum melt furnace at Watervliet, 3/7, p.40
Color-coated stainless, 4/11, p.54
Expansion plans, 3/28, p.78
Fenner Jr.: New tool steel selector program aids warehousers and users, 4/25, p.118

Allied Research Products Inc.:
Zinc plating brighteners, liquids, IE, 1/4, p.370

Allis Co., Louis:
Tube cooled motors, IE, 6/6, p.124

Allis-Chalmers Mfg. Co.:
Engine plant, Harvey Wks., 3/7, p.77
Forms Industrial Equip. Div., 3/21, p.123
Lift trucks, IE, 6/20, p.132
Price fixing charge, plead guilty, 4/25, p.53
Thin walled welded stainless tubing carries gas to cool generators, 3/28, p.86
Vibrating mill, IE, 5/30, p.98

Alloyd Corp.:
Electron beam vaporizer, IE, 6/6, p.120

Almco:
Vibratory metal finisher, IE, 2/8, p.96

Alpha-Molykote Corp.:
Lubricant tailored for tough jobs, 2/1, p.94

Alphil Spot Welder Mfg. Corp.:
Combination spot-projection welder, IE, 1/11, p.96

Aluminium Ltd.:
Expands in Colombia, B, 5/30, p.64

Aluminum Co. of America:
Buys Cupples, B, 2/22, p.65
Buys Rea Magnet Wire, 2/1, p.80
Church roof takes 20,000 lbs of aluminum, 6/6, p.45
Contracts with GM for molten aluminum, 2/1, p.43
Enamel coated sheets, new lines, 3/7, p.77
Powdered slugs show way to better aluminum impacts, 6/13, p.161
Price discrimination charge against independent extruders, 3/14, p.48
Smelter, Warrick, Ind., 1/25, p.26; yearly capacity, 4/4, p.84
Starts 1st potline at Warwick reduction plant, 6/6, p.158
Tapered ends add strength of aluminum tube, 3/28, p.103

Aluminum Extrusions Inc.:
Boosts capacity, 4/4, p.126

Aluminum Products Inc.:
Lightweight winch, IE, 3/21, p.173

Alvey-Ferguson Co.:
Dip-type washing unit, IE, 1/18, p.107

American Bosch Arma Corp.:
Buys Tele-Dynamics, B, 2/29, p.77

American Can Co.:
Oreg. plant plans, 1/25, p.62

American Chain & Cable Co, Inc.:
Buys Electro-Mech, B, 3/21, p.134
Geared trolley hoist, IE, 5/9, p.166
Page Steel: Flat weld wire, 6/27, p.93

American Forge & Mfg. Co.:
Coiltilter, 5/23, p.140; IE, 2/29, p.98

American Hoist & Derrick Co.:
Buys Industrial Brownhoist, B, 4/18, p.118

American Lanolin Corp.:
Rust preventive doubles as coolant, IE, 5/23, p.163

American Machine & Foundry Co.:
Buys Cuno Eng., B, 6/20, p.96
Electric Motor Div. bought by Canadians, 4/18, p.118

American Metal Climax Inc.:
Buys Pyron, B, 6/6, p.94
Moves New York offices, B, 3/21, p.128

American MonoRail Co.:
Trolley model, IE, 5/2, p.89
Turntable crane handles tubing, 6/20, p.119

American Motors Corp.:
Ceramic coated exhaust systems, 6/6, p.69
Rambler assembly in Australia, 1/18, p.44

American Pulley Co.:
Merges, B, 5/30, p.65
Portable elevating trucks, IE, 6/20, p.132
Truck design, IE, 2/22, p.90

American Road Equipment Co.:
Front drive fork truck, IE, 1/11, p.93

American Solder & Flux Co.:
Free flowing flux for stainless, IE, 2/8, p.96

American Stamping Co.:
Expands, B, 5/30, p.64

American Tool Works Co.:
Radial drill, IE, 4/4, p.159

American Welding & Mfg. Co.:
West Coast plant, B, 6/13, p.150

American Zinc, Lead & Smelting Co.:
Young: Lead, zinc prospects, 4/25, p.63

Ampco Metal Inc.:
Buys foundry, B, 3/21, p.126

Amtorg Trading Corp.:
Imports, Russian watches, 1/11, p.28

Anaconda American Brass Ltd.:
Expands Toronto rolling capacity, 1/18, p.80

Anaheim Electronics Co.:
Sold, B, 2/29, p.77

Anderson Corp.:
How to rebuild a company (Arthur and Anderson report), 3/28, p.54

Apex Machine & Tool Co.:
Gardner-Denver subsidiary, B, 1/11, p.67

Arcair Co.:
Arc cutting torch, 2/29, p.84
Contactor controls, IE, 2/1, p.104
Vertomatic: This machine cuts costs, speeds heavy plate welding, 1/18, p.101

Arcwire Corp.:
Expands at Carmel plant, B, 5/2, p.62

Armco Drainage & Metal Products Inc.:
Expands plant, B, 3/28, p.78

Armco Steel Corp.:
Armco Div.: Sales training pays off, 4/11, p.56
Ductility of 17-4 PH increased, 4/25, p.127
Johnston interviewed, pic., 5/9, p.95
Johnston: Sky's the limit for metal buildings (steel or aluminum), 5/23, p.88
Modernizes and rebuilds Hamilton plant, 5/16, p.81
New iron requires only one coat of enamel, 2/1, p.34
Produces 100 millionth ton, 2/22, p.26

Armitage & Co., John L.:
Thermal set coating, IE, 6/27, p.98

Aronson Machine Co.:
Welding positioner, IE, 2/1, p.102; 5/9, p.166

Arrow Tools Inc.:
Sintered suction filter, IE, 1/11, p.90

Arwood Precision Casting Corp.:
Merges to form Arwood Corp., 1/18, p.81

Atlantic Steel Co.:
Sales and earnings: What to do when imports hurt, 2/29, p.53

Atlas Engineering Co. Inc.:
Electronics plant, B, 2/29, p.77

Atronic Products Inc.:
Routing system conveyor, IE, 1/11, p.94

Automatic Transportation Co.:
Lift truck power steering, IE, 4/25, p.132

Automation Industries Inc.:
Buys Ultrasonic Testing, B, 2/1, p.80

Autoquip Corp.:
Hydraulic power package, IE, 2/8, p.98

Avco Corp.:
Bottle size jet to propel satellite, 5/23, p.144
Comex communications system for Westinghouse, 5/23, p.75

Avdel Inc.:
Formed, B, 4/25, p.100

Avionics Investing Corp.:
Formed, 5/9, p.101

B

Baird-Atomic Inc.:
Buys Axler Associates, B, 3/21, p.134

Baker Perkins Inc.:
Special tool leads to savings, 1/25, p.80

Baldwin-Lima-Hamilton Corp.:
Buy American Law may apply for hydroturbines, 4/25, p.56
Hydrostatic presses form shapes, reform properties: J. L. Lebach, 4/11, p.93

Barnes Corp., John S.:
Portable press, IE, 5/16, p.118
Production drilling unit, IE, 1/11, p.96

Barium & Chemicals Inc.:
Buys Steubenville plant, B, 3/7, p.77

Barry Controls Inc.:
Material fights vibration, damping qualities, 2/15, p.131
Merges Wright Line, B, 6/27, p.73
Shock machine, IE, 1/25, p.86

Bay State Abrasive Products Co.:
Buys Felker Mfg., B, 5/16, p.92

Beckett & Co., Inc., Thomas:
Submerged pumps, IE, 1/25, p.86

Beckett-Harcum Co.:
Drill press feeds air powered, IE, 5/2, p.84

Benchmaster Mfg. Co.:
Feeder automatic, IE, 4/25, p.130

Bendix Aviation Corp.:
Computers for supervisory work "Control Buffers," 5/16, p.42
Leases transistorized data processing, 3/21, p.86
Tape controls machine tool to short increments, 3/14, p.105

Bethlehem Steel Co.:
Antenna (Navy) network, counterweights fabricated, 5/23, p. 130
Blast furnace bell, hopper hard surfaced by welding, 4/25, p.116
Capital expenditures for '60, 2/8, p.72
Expands at Lackawanna, 4/4, p.121
Expands ingot capacity at Sparrows Pt., 4/18, p.111
Modernizing shipyard, B, 6/13, p.141

Binks Mfg. Co.:
Airless spray system, IE, 3/7, p.114
Portable compressors, IE, 5/23, p.156
Spary system, IE, 2/29, p.97

Birdsboro Steel Foundry & Machine Co.:
Changes name, 1/18, p.81

Black & Decker Mfg. Co.:
Buys DeWalt, B, 5/30, p.64

Blaw-Knox Co.:
Copes-Vulcan leases Erie plant, B, 5/2, p.62

Bliss Co., E. W.:
Automatic can line, 4/11, p.106
Belgian order, rolling equip., 4/11, p.82
Multiple die press, IE, 3/21, p.165
Pulsating burner shortens melt time, 1/25, p.69
Scroll shear, IE, 2/8, p.100

Bliss & Laughlin Inc.:
Buys Sierra Drawn Steel, 1/11, p.67

Blue M Electric Co.:
Convection ovens, temp. ranges, IE, 2/29, p.102
Recirculating utility ovens, IE, 4/4, p.162
Stabil-Glow furnaces, box-type, high temp., IE, 1/11, p.94

Bodine Corp.:
Tapping unit trims tap removal time, IE, 3/7, p.112

Boeing Airplane Co.:
Numerical control service-machine programming, 5/16, p.42
Tape control trims production time, 5/30, p.74
Space vehicle concept, pic., 5/9, p.87

Booker-Cooper Inc.:
Bearing material, IE, 2/15, p.144

Borg-Warner Corp.:
Forms Controls Div., B, 3/21, p.126
Ingersoll acquires Elgin Metal-formers, 5/16, p.92
Norge builds Ark. plant, 2/29, p.77
Norge refrigerator-freezers shipped to England via St. Lawrence, 6/6, p.46

Boston Woven Hose & Rubber Co.:
Conveyor belt, 45° incline, IE, 4/4, p.166

Bostrom Corp.:
Buys Hickman, B, 1/11, p.67

Boyar-Schultz Corp.:
Deep hole drill attach. for lathe, IE, 3/28, p.106

Brad Chemical Inc.:
Oxidation inhibitor, IE, 2/1, p.102
Rust inhibitor, IE, 6/6, p.120

Braeburn Alloy Steel Corp.:
Airque V, new air hardening steel, 3/28, p.84

Branson Instruments Inc.:
Flaw alarms, IE, 1/11, p.96

Branson Ultrasonic Corp.:
Sandwich-type transducer speeds cleaning, 5/9, p.159
Transistors in cleaning unit, IE, 5/2, p.90
Ultrasonic degreaser, IE, 2/8, p.98
Vidagage measures missile nose cones and radomes, 2/22, p.87

Bren Mfg. Co.:
Sorting machine to be tested in canning line; sheet grading, stacking, 5/16, p.106

Bridge & Tank Co. of Canada:
Expands at Hamilton Div., 5/23, p.121

Bridgeport Brass Co.:
Mercury checks corrosion of new copper-base alloy 77, 5/23, p.151

Briggs Associates Inc.:
Printer-plotter computer system, 2/8, p.36

Briggs & Stratton Corp.:
Buys Le Roi plant, B, 4/4, p.126

British Titanium Products Ltd.:
Builds plant, Quebec, B, 4/18, p.118

Brown & Sharpe Mfg. Co.:
Deep hole drill, IE, 3/21, p.165
Machine slices, dices semiconductor materials, IE, 4/25, p.130

Brush Beryllium Co.:
Expands, B, 4/25, p.93
Trepanning of beryllium billets speeded by new lathe, 6/13, p.162

Budd Co.:
Buys Metrol, B, 4/18, p.118
Carbonyl process, gas deposition of pure nickel turns out first-rate tools, dies, 5/2, p.78

Merges Tatnall and Nuclear Divs., 1/18, p.81

Buell Engineering Co. Inc.:
Buys Northern Blower, B, 1/25, p.63

Bullard Co.:
Single head contour grinder, IE, 3/28, p.105
Size-Au-Trol on vertical lathes, IE, 5/30, p.90
Vertical turret lathe-single lever control, IE, 1/4, p.361

Burgmaster Corp.:
Turret drill unit, IE, 2/1, p.104

Buschman Co., E. W.:
Table-Cable conveyor, IE, 2/1, p.106

Bustin Steel Products Inc.:
Mechanical descaler, 2/29, p.85

Butler Mfg. Co.:
Pre-engineered buildings, roof guarantee 20 yrs., 6/20, p.84

Bux Magnetic Products Inc.:
Portable drill stand, vacuum operated base, IE, 6/6, p.123

C

Cadillac Gage Co.:
Data processing helps firm keep grip on production costs, 6/6, p.102

Calumet & Hecla Inc.:
Vanadium tubing extruded experimentally, 1/11, p.87
Wolverine makes inflatable metal "strubing," 4/4, p.121

Canada Wire & Cable Co.:
Merges Western Wire, B, 6/20, p.99

Canton Malleable Iron Co.:
Expands, B, 2/15, p.108

Capewell Mfg. Co.:
Double carbide material for band-saw blades, 4/25, p.127

Carborundum Co.:
Acquires share of Pechiney subsidiary for aluminum oxides, 4/18, p.111
Forms tech. branch, B, 3/21, p.128

Carpenter Steel Co.:
Boron isotope used for nuclear alloy, 5/16, p.112
New wear resistant steel easy to heat treat (Hi wear 64), 1/18, p.100
Thin walled stainless tubes carry hydrogen to cool generators, 3/28, p.86

Casting Engineers:
See Consolidated Foundries

Caterpillar Tractor Co.:
Balancing machine speeds design, production, 1/25, p.76

Ceco Steel Products Corp.:
Integrates with new steel mill (Ochiltree Wks.) at Lemont, Ill., 6/6, p.83

Centrifugal Casting Machine Co.:
Casting unit, IE, 5/16, p.118

Central Scientific Co.:
Unit measures vacuum, IE, 5/16, p.123

Circo Ultrasonic Corp.:
Cleaner mechanically agitated, IE, 5/16, p.123

Challenge Mfg. Co.:
Merges into Cook Bros., B, 2/1, p.80

Champion Pneumatic Machinery Co.:
Air compressors, IE, 3/21, p.182

Chase Brass & Copper Co.:
Automatic tube rolling mill, Chase Metal Wks., 3/21, p.123

Chicago Bridge & Iron Co.:
Buys welding business, B, 6/20, p.93

Chemetron:
Arcwelders, IE, 1/18, p.111; 4/25, p.130
NCG plans rail welding plant, 2/29, p.76
Welding control, IE, 2/15, p.146

Chemical Co., B. B.:
Adhesive resistant to oils, IE, 5/9, p.171

Chemical Consulting Service:
Plastic emulsion, IE, 6/27, p.96

Chicago Rivet & Machine Co.:
Machine guides rivet, IE, 5/2, p.84

Chicago Wheel & Mfg. Co.:
Tumbling unit, IE, 3/14, p.114

Chromalloy Corp.:
Sintercast Div.: New machinable carbides stand up to high temp., 3/14, p.99

Chrysler Corp.:
Chesebrough: Market report, 6/6, p.46
Closes Imperial plant, 2/22, p.24
Engine conveyor lines accelerated with automatic tongs, 1/25, p.77
Garwood points to . . . more coil steel use, cold forming, lighter gages for unit bodies, 4/4, p.107
Lancer new compact, 5/9, p.112
Leary: Manager of the future, 5/30, p.27
Plymouth revamps assembly plant, 1/11, p.52
Plymouth's XNR dream car, pic., 3/21, p.110
Shells for starter motors, 6/20, p.80

Cincinnati Gilbert Machine Tool Co.:
Rotary tables, IE, 5/2, p.89

Cincinnati Milling Machine Co.:
Buys Giddings plant, B, 4/25, p.93
Elektrojet (Kane): Electrical machining can help you, 4/11, p.104
Heater fuses frit on pipe, IE, 5/23, p.153
Stugard: A look at tomorrow's machines, 5/9, p.157

Cincinnati Pump & Mfg. Co. Inc.:
Name changed, B, 2/22, p.64

Circo Ultrasonic Corp.:
Heavy duty press, IE, 5/2, p.86
Nondestructive tester, IE, 6/27, p.99

Clair Mfg. Co. Inc.:
Surface finishing unit, IE, 3/7, p.103

Clark & Co. Inc., W. E.:
Negotiates for Herrick, 6/20, p.96

Clark Equipment Co.:
Foreign affiliates, B, 4/25, p.93
Fork truck, carbon drive pile control, IE, 6/6, p.119
Gas powered fork truck, IE, 1/18, p.107
Heavy duty tractor, IE, 5/2, p.83

Clarkson Laboratories Inc.:
Aluminum cleaner (Alfos), IE, 3/21, p.191

Cleveland Electric Illuminating Co.:
Expansion plans, 3/14, p.40
Nuclear projects, 3/7, p.40

Cleveland Pneumatic Tool Co.:
Watson predicts electrochemical milling, 4/4, p.142

Cleveland Vibrator Co.:
Electric vibrator moves stubborn materials, IE, 3/21, p.168

Cleveland Worm & Gear Co.:
Now an Eaton division, B, 1/11, p.66

Clevite Corp.:
Buys Schockley Transistor, B, 4/18, p.118

Clow & Sons, James B.:
Hand tool replacement nets annual return, 2/29, p.94

Clymer Associates Inc.:
Scrap improvement program, 2/15, p.84

Colorado Fuel & Iron Corp.:
Blast furnace lining repair, spray-on refractory, 5/2, p.81
Pueblo, Colo., oxygen converter, 5/23, p.115

Colson Corp.:
Mobile floor crane, IE, 2/29, p.104
Pallet truck, IE, 1/25, p.86
Salesmen sell first, train later (Adams reports), 4/4, p.97

Columbia-National Corp.:
Resumes zirconium output, 6/13, p.144

Connellsville Mfg. & Mine Supply Co.:
Coke plant contracts, 5/23, p.121
Mechanized equipment for coke plant, 1/18, p.94

Connors Steel: See H. K. Porter

Consett Iron Co. Ltd.:
Electric soaking pits, 5/23, p.138

Consolidated Chemical & Paint Mfg. Co. Inc.:
Rust inhibiting paint, IE, 3/7, p.122

Consolidated Foundries & Mfg. Co.:
Casting Eng.: Lost wax process for small partmakers, 4/25, p.112

Consolidated Mill Supply Co. of Chicago:
Automatic scrap shear, IE, 5/16, p.124

Consolidated Western Steel Co.:
Proximity switch controls pipe conveyors at welding station, 2/22, p.87

Continental Copper & Steel Industries Inc.:
Buys copper rod mill, 2/15, p.110
Buys Technitron, B, 2/22, p.65

Continental Steel Corp.:
Industrywide price increase, report, 4/25, p.53
Severs: Market report, 6/13, p.101

Conversion Chemical Corp.:
Pickle for cast aluminum, IE, 5/23, p.162

Conveyor Systems Inc.:
Buys Farquhar Div., B, 4/18, p.118

Cooper Weymouth Inc.:
Scrap choppers, cutting speeds, IE, 2/29, p.104

Copperweld Steel Co.:
Expands Ohio Seamless Tube, new mills (McKay contract), 5/16, p.141 and 5/23, p.115
Glassport office building, B, 6/20, p.93

Covel Mfg. Co.:
Precision surface grinder, IE, 1/4, p.369

Crabtree, R. W.:
Bren Mfg. (English) coal sheeting lines, 5/16, p.106

Crane Co.:
Buys General Air Conditioning, 5/16, p.92
Buys National-U.S. Radiator, 1/11, p.66 and changes name to Natus, 2/22, p.64
Decentralizes, forms five groups, 2/29, p.76

Creative Industries Inc.:
Plastics for auto uses, 3/28, p.62

Crompton & Knowles Corp.:
Plastic adhesive, IE, 1/11, p.94

Cross Co.:
Strikers rehired, NLRB order, 5/23, p.77
Wasted handling time cut by milling parts en route (exhaust manifold castings), 3/14, p.108

Crucible Steel Co. of America:
Degassing method for large or small heats (German), 1/11, p.78
Discontinue hot rolling at Park Wks., 2/29, p.37

Curry Air Shear Corp.:
Hydraulic shear, IE, 4/25, p.130

Curtis Industries Inc.:
Headquarters building, 2/29, p.77

Curtiss-Wright Co.:
Radiography course for students, 5/23, p.140

Cutler-Hammer Inc.:
Storage programing line, 5/30, p.85

D

Dauber Chemical Co.:
Daubrite, packaging material prevents tarnish, 5/23, p.144

Davey Compressor Co.:
Industrial compressors, IE, 2/1, p.106

Day-Brite Lighting Inc.:
Merges with Emerson, 5/23, p.124

Dayco Corp.:
Negotiates for Metal Hose, B, 3/7, p.78

Deere & Co.:
Transmission problem solved . . . by welded gears, 2/22, p.72

Designers for Industry Inc.:
Co-op iron casting service, 2/15, p.110

Despatch Oven Co.:
Electric furnace, IE, 5/23, p.156

Die Cast Machinery Inc.:
Formed, B, 3/7, p.77

Detroit Power Screwdriver Co.:
Elevating feeder, IE, 3/7, p.121

Detroit Steel Corp.:
Merges Portsmouth, Eaton chairman, 2/22, p.35

DeWalt Inc.:
Bought by Black & Decker, B, 5/30, p.64

Diamond Machine Tool Co.:
Underdrive power squaring shears, IE, 1/25, p.81

Die & Automation Inc.:
Press extractor has inching controls, IE, 5/30, p.93

Dietert Co., Harry W.:
Moisture content tester, IE, 3/28, p.109

Dings Magnetic Separator Co.:
Chip separator, IE, 4/4, p.166

Divine Bros. Co.:
Abrasive belt unit, IE, 5/16, p.120

Dixon Automatic Tool Inc.:
Part feeder, IE, 4/11, p.117

DoAll Co.:
Angle power saws, IE, 4/25, p.129
Hand grinder, IE, 5/9, p.164
Spark machining joins band cutting team (quenched arc cutting), 3/28, p.90

Dow Chemical Co.:
Expands, Louisiana Div., B, 3/7, p.77
Plans new plants, B, 2/29, p.77
Space Age cleaning services, 6/27, p.81

Dow Metals Products Co.:
Porcelain on magnesium, TO, 2/29, p.79

Dravo Corp.:
Sinter plant, Trenton Wks., 3/14, p.77
Welded industrial grating produced on automated line, 5/16, p.100

Ducommun Metals & Supply Co.:
McCormick Steel merger discussed, 4/18, p.116

Du Pont de Nemours & Co. Inc., E. I.:
Paints for metal finishing, 2/29, p.100

Duraloy Co.:
Buys Walmil, 4/4, p.128

Duranor:
Plans Argentine plant, 6/27, p.72

Dwight Lloyd: See McDowell

Dykrex Corp. of America:
Automatic spindle rippers pneumatically operated, IE, 5/16, p.126

E

Easy Laundry Appliance:
Cuts operations, furloughs employees, 2/15, p.64

Eaton Mfg. Co.:
Forms divisions (Cleveland Worm and Farval), 1/11, p.66
Detroit research center, 4/11, p.83

Eclipse Fuel Engineering Co.:
Forging cuts valve cost, 1/25, p.69

Eddy-Rucker-Nickels Co.:
Electrical machinery industry survey, 6/13, p.123
Instruments, next two decades, 6/27, p.55

Edgemont Machine Co.:
Disc clutches-heavy duty, IE, 3/21, p.191

Elmco Corp.:
Determinant tempering improves castings, 2/22, p.73
Flow design used for crawler tractors castings, 3/21, p.156
Tape control, tool changer device, 5/30, p.72

Electric Controller & Mfg. Div.:
See Square D Co.

Electric Hotpack Co. Inc.:
Portable unit heats metals to forming temps., IE, 6/13, p.190

Electro Switch Corp.:
Buys Electro Contacts, B, 4/25, p.104

Electrofilm Inc.:
Solid film lube, IE, 1/4, p.366

Electronic Communications Inc.:
Merger, B, 3/21, p.134

Electronic Engineering Co.:
Buys Anaheim, B, 2/29, p.77

Elektrojet Engineering Service:
See Cincinnati Milling

Electro-Tec Corp.:
Buys Lambros, B, 6/6, p.94

Elgin Metalformers Corp.:
Sold, B, 5/16, p.92

Ellerbee Bros.:
Weld time cut with switch from manual to semiautomatic system (oil tanks), 4/4, p.150

Ellicott Machine Corp.:
Acquires plant, Brandt Inc., 5/9, p.125

Elox Corp. of Michigan:
Power unit ups electrical discharge machining rate, 4/4, p.165

Emerson Electric Mfg. Co.:
Merges with Day-Brite, 5/23, p.124

Emhart Mfg. Co.:
Horizontal press, IE, 5/9, p.161

Empire Plow Co.:
Modern heat treating, isothermal method, 6/6, p.116

Engis Equipment Co.:
Compound angle sine table, IE, 5/2, p.86

Enthone Inc.:
Electrocleaner for steel, IE, 5/16, p.122

Eriez Mfg. Co.:
Feeder, scrap separators, 2/29, p.95
Hanging magnetic rack, IE, 1/4, p.364
Magnets handle cold rolled sheets, 1/25, p.72

Essex Conveyors Inc.:
Dumper for angle track use, IE, 1/25, p.82

Everlube Corp. of America:
Dry lubricant, Perma-Slik, IE, 3/28, p.109

Evinrude: See Outboard Marine

Ex-Cell-O Corp.:
Buys sine plate line, B, 5/23, p.121
Buys Optical Gaging, B, 2/29, p.77; 3/14, p.80

Executive Manpower Corp.:
Breakdown of job openings and salary levels for sales managers, 4/4, p.81
How executives are paid, basis of salary plus bonus, 4/4, p.82

Expert Welding Machine Co.:
In-line transfer welder, IE, 5/23, p.156

F

Fabri-Tech: See Lamb Co.

Fairfield Mfg. Co. Inc.:
Automatic chucking lathes speed short run jobs, 5/16, p.108

Fairmont Aluminum Co.:
Expands strip facilities, B, 4/25, p.93

Falk Corp.:
Motoreducers, IE, 2/1, p.102

Fannon Products Co., John J.:
Subsidiary of Hupp, 1/11, p.67

Faradyne Electronics Corp.:
Buys Investment Casting, B, 2/29, p.77

Fate-Root-Heath Co.:
Plymouth Locomotive vs. Mitsubishi, Panama Contract: Rep. Levering leads fight, 5/2, p.50
Plymouth loses, fights back, 5/23, p.90
Why Mitsubishi won, 5/23, p.91

Federal Machine & Welder Co.:
Piercing and blanking press, IE, 5/2, p.83

Federal Pacific Electric Co.:
Buys Cornell-Dubilier, B, 2/1, p.80

Federal Products Corp.:
Direct measuring device, IE, 1/11, p.96
You can gage to millionths, but . . . 3/21, p.144

Feedall Inc.:
Part Feeder, IE, 1/4, p.362

Fenn Mfg. Co.:
Rolling mill draws wire, IE, 6/6, p.120

Fen-Thread-Machine Co. Inc.:
Thread miller, IE, 6/6, p.120; 1/4, p.365

Ferro Corp.:
Buys Vitro Mfg., B, 3/14, p.88
Research facilities, 4/4, p.124

First Mississippi Corp.:
Negotiates for div. of Associated Piping, B, 2/8, p.72

Fleters Co.:
Level-Rite mounts, IE, 3/14, p.129

Fluid Power Ltd.:
Formed, B, 3/21, p.126

Food Machinery & Chemical Corp.:
Becco ammonium persulfate, clean surface for copper (electrodeposits), 6/20, p.119

Foothills Steel Foundry & Iron Works Ltd.:
Changes hands, B, 3/21, p.123

Ford Motor Co.:
1960 sales, Henry Ford predicts, 5/30, p.28
1961 Ford, STEEL's artists' impression, pic., 2/8, p.59
Assembly plant adds second shift, 2/15, p.64
Buys Sherman Products, B, 5/30, p.65
Canadian glass plant, car windows, 6/6, p.46
Checks new model reaction (Flora, Ill.), 6/27, p.36
Comet initially produced at Lorain, 2/8, p.36
Falcon engine, how costs were trimmed, 5/30, p.51
Falcon plant, San Jose, Calif., 4/4, p.84
Ferris wheel at Ford, machining camshafts, 4/4, p.157
Galvanized sheets spotwelded for compacts, 2/22, p.49
Heat treat shop (Transmission & Chassis Div.), gas fired furnaces, 5/2, p.72
Hill: "Return politics to the People," 2/8, p.35
Hydraulic pump design, Tractor & Implement Div., cuts costs, 3/7, p.98
Levacar, 200-500 mph, experiment (to and from airports), 6/13, p.102
Luxury compact, (may join Lincoln line), 3/21, p.109
Scotch yoke engine research, 2/15, p.89
Steelmaking technique hikes open hearth output, cuts heat time, 5/30, p.40

Fosdick Machine Tool Co.:
Numerical depth control for boring machine, IE, 5/9, p.170

Fostoria Corp.:
Two stage head pumps, IE, 1/4, p.368

Foster Co., L. B.:
Warehouse, Cleveland, B, 4/18, p.122

Foundry Services Inc.:
Degassing compound, IE, 5/23, p.163

Frankel Engineering Laboratories:
Differential valve divides flow six ways, IE, 3/7, p.120

Freeport Nickel Co.:
Outdoor sintering furnace, Louisiana, 5/9, p.154

Freeport Sulphur Co.:
Concentric pipeline (3-in-1) transports sulphur, 1/18, p.97

Friden Inc.:
Chromate coat aids soldering, 4/4, p.155

Fruehauf Trailer Co.:
Frame redesign lightens, strengthens trailers, 3/14, p.100

Fuller Co.:
Filter cleaning methods, 2/8, p.86

G

Gallmeyer & Livingston Co.:
Surface grinder-automatic feeds, IE, 3/7, p.103

Gardner-Denver Co.:
Apex a subidiary, B, 1/11, p.67

Garlock Inc.:
Buys Chetron, B, 6/6, p.94

General Aniline & Film Corp.:
Moves headquarters, B, 2/8, p.73

General Dynamics Corp.:
Dynapak tests missile parts, Hyge principle (water entry test), 4/25, p.128
Feddersen (Convair) reports new high energy rate forming processes at SAE, 4/25, p.108
McLead (Stromberg-Carlson): Sales report, 5/2, p.33
Merges Material Service, B, 1/18, p.81

General Electric Corp.:
Annealing setup tames silicon steel: Transformer cores processed at Pittsfield and Rome, Ga., 5/16, p.102
Bright anneal for stainless strip, Shelbyville vertical furnace, 5/9, p.148
Capital spending efficiency urged by Ginn, 2/15, p.63
Carey (IUE) to present demands, 6/6, p.53
Computer market entry, 6/27, p.35
Computers-miniature, 3/28, p.42
Disciplines managers for talking price with competitors, 1/11, p.28
India orders locomotives, B, 4/25, p.93
Industrial diamonds, how made, 1/11, p.87
Motor, generator frame sizes, 4/11, p.110
Pushbutton size cut 40%, IE, 6/27, p.95
Remote control demonstrated, master station unit, 6/6, p.115
Silicone fluid, IE, 2/15, p.149
Small gas turbine can do big jobs (300 lb), 2/29, p.86
Speed drives, IE, 1/4, p.361
Subcontract orders, Canadian firms, 6/13, p.103
Technicians to plants, custom measuring, 5/16, p.42
Workers laid off, Appliance Park, 5/30, p.26

General Mills Inc.:
Buys Daven and Laible Mfg., 6/20, p.96

General Motors Corp.:
1st quarter output, 4/18, p.74
10 guides for supervisors: Schwarze, 5/9, p.85
AC Spark Plug: Unraveling production snarls, 5/16, p.54
Chevrolet-Cleveland Div.: Mechanical positioner for casting in induction heating, 6/13 p.156

Chevrolet: How Corvair engine parts are cast, 6/27, p.59
Chevrolet storage line, Janesville plant, 5/30, p.85
Fabricast plant, molten aluminum contracts, 2/1, p.43
Fisher 'stamps' wire seat frames, 4/11, p.69
Fisher Body expands plant, 2/1, p.71
Oldsmobile: Electronics drive material handling trains through warehouse (copper signal wires), 6/13, p.173
Reliability concept is step beyond quality control (Skinner), 2/29, p.80

General Thermoelectric Corp.:
New thermoelectric alloy 'Neelium,' 6/13, p.160

Gerrard & Co., A. J.:
Strapping tool, IE, 5/16, p.120

Giannini Plasmadyne Corp.:
Hand spray gun, IE, 2/1, p.104

Gibraltar Steel Corp.:
Expands steel service center, 4/4, p.126

Giddings & Lewis Machine Tool Co.:
Joy stick milling feed control, IE, 3/14, p.113
Sells Cincinnati plant, 4/25, p.93
Tape control machines for Convair, 6/6, p.100

Gilman Inc., Russell T.:
Indexing slide table, IE, 4/18, p.160

Gisholt Machine Co.:
Automatic turret lathe, IE, 2/29, p.97; 4/25, p.129

Globe Hoist Co.:
Dock leveling ramp, IE, 5/9, p.168

Globe-Union Inc.:
Battery plant, B, 4/4, p.121

Gorham Mfg. Co.:
Buys Pickard & Burns, B, 2/29, p.77

Gorham Tool Co.:
Bought by Popham, B, 6/20, p.93

Gorton Machine Co., George:
Bed type mill, 14 models, IE, 1/11, p.89
Transfer machine uses building block setup, 5/16, p.98

Graham Transmissions Inc.:
Cam control for speed drive, IE, 3/28, p.106

Granite City Steel Co.:
Expands, extends pit side of open-hearth, B, 1/11, p.66
Sendzimir mill, B, 4/11, p.82

Graver Tank & Mfg. Co.:
Name changed, B, 2/22, p.64

Gray Co., G. A.:
Planers, IE, 5/2, p.86; 6/6, p.119
Tape controlled unit, IE, 6/13, p.176

Graybar Electric Co.:
Henges: Nuclear generating capacity, 4/25, p.54

Grayguard Inc.:
Synthetic rubber sealant, IE, 1/4, p.370

Great Lakes Steel Corp.:
Columbium added to steel (GLX-W) makes pipelines more weldable, 4/11, p.102 and 4/4, p.83
Computer control for new hot strip mill, 2/8, p.46
Profile check insures quality strip, 2/15, p.128

Greenerd Arbor Press Co.:
Hydraulic expanding unit, IE, 4/25, p.132

Greenlee Bros. & Co.:
Aluminum diecasting machine, IE, 5/30, p.87

Greer Hydraulics Inc.:
Moves to West Coast, B, 1/11, p.66

Gregory Industries Inc.:
New field, powder actuated tools, 3/28, p.41

Griffin Wheel Co.:
Pressure pouring for car wheels, 3/7, p.90

Grigg Specialty Tools:
Industrial burner, IE, 6/6, p.124

Gulton Industries Inc.:
Ultrasonic foil welder, IE, 2/15, p.143
Ultrasonic soldering iron, IE, 6/13, p.176

Gumm Chemical Co., Frederick:
Spray washing machine-low foam, IE, 4/25, p.132

Grumman Aircraft Engineering Corp.:
Diversifies, steel-aluminum truck-trailers, TO, 6/20, p.105

H

H&H Machine Co Inc.:
Expands, B, 6/27, p.72

Hal Industries:
Cutting oil, IE, 2/22, p.94

Hammond Machinery Builders Inc.:
Work holder, IE, 5/9, p.166
Electrolytic grinder, IE, 2/1, p.101; 6/13, p.175

Hanchett Magna-Lock Corp.:
Magna-Lift with batteries, IE, 6/13, p.176

Hanna Co., M. A.:
Pilot plant to test semitaconite ore potential, 3/14, p.51

Hannifin Co.:
Hydraulic cylinders, IE, 6/27, p.98

Hanson-Van Winkle-Munning Co.:
Conduit finishing line, 4/25, p.127

Harbison-Walker Refractories Co.:
Hot patch system, more heats per campaign from furnaces, 6/27, p.94
Oxygen process gets boost from refractory research, 2/22, p.76

Harco Laboratories Inc.:
Asbestosite-refractory, IE, 2/1, p.104

Harig Mfg. Corp.:
Compact surface grinder, IE, 5/16, p.130

Harper Co., H. M.:
Expanding, B, 5/30, p.94

Harper Electric Furnace Corp.:
Graphite tube furnace, IE, 3/7, p.111
Industrial box kilns, IE, 6/13, p.184

Harris Foundry & Machine Co.:
Scrap sheared to length, 3/7, p.102

Hayes Inc., C. I.:
Induction heating unit-pushbutton, IE, 2/29, p.104

Haynes Stellite Co.:
Superalloy spring wire, survives brazing heat, 2/22, p.68

Heidrick & Struggles:
Executive demand up, 4/25, p.53
Financial executives in demand, 1/18, p.43

Heil Co.:
Throwaway carbide inserts a success, 3/14, p.105

Heresite & Chemical Co.:
Buys General Coating, B, 1/11, p.67
Buys Grip Nut, B, 1/11, p.67
Forms equipment leasing firm, 2/8, p.35

Hickok Electrical Instrument Co.:
Service center handles repair jobs, 6/27, p.47

Hickman Industries Inc.:
Merged, B, 1/11, p.67

High Voltage Engineering Corp.:
Buys Applied Radiation, B, 6/27, p.73

Hill Inc., Walter P.:
Drill-numerical control, IE, 6/20, p.125

Hill-Acme Co.:
Forms Material Handling Div., B, 1/11, p.66
Sheet, billet lifter, IE, 5/9, p.164

Hillyer Corp.:
Drill-numerical control, IE, 5/30, p.96

Hitemp Wires Inc.:
Monrovia plant, B, 5/2, p.63

Hoff, Canny, Bowen & Associates:
Executive man hunt, pirating, 4/18, p.84

Hogan Faximile Corp.:
Printer-plotter computer system, 2/8, p.36

Holcroft & Co.:
Heat treat furnace at Ford, 5/2, p.72

Holden Co., A. F.:
Carbon potential liquid cuts decarb, IE, 2/29, p.102

Hones Inc., Charles A.:
Heat treat furnace, IE, 2/15, p.149

Hooker Chemical Corp.:
Installation of Hoechst-Uhde electrolytic cells, B, 2/8, p.72
Moves headquarters, B, 4/4, p.128

Horizons Inc.:
Thermoelectric generator, 2/29, p.59

Hotpoint Co.:
Appliance service pricing manual, 3/14, p.39

Houghton & Co., E. F.:
Cleaning compounds, IE, 2/8, p.103

Howe Sound Co.:
Buys Peterson Machine Tool, B, 3/21, p.134
Buys Triplett & Barton, B, 2/22, p.65

Huck Mfg. Co.:
Diversification: How Huck changed its marketing to keep pace, 6/6, p.58

Hughes Aircraft Co.:
Electronic ear tunes in faint radio signals, 4/18, p.83
Hire 600 engineers, 5/9, p.88
Shielded arcwelder, IE, 3/14, p.126

Hunt Valve Co.:
Locking feature on sliding sleeve valves, IE, 4/4, p.160

Hupp Corp.:
Buys Fannon Products, 1/11, p.67
Buys valve line, B, 2/29, p.77
Gibson facilities, B, 5/30, p.64

Hutton Fabricating Mfg. Co.:
Oxygen lances with tips, IE, 5/16, p.118

Hydraulic Press Mfg. Co.:
Bennett: Sees trend to lighter auto parts, aluminum, plastics, 5/30, p.27
Rail straightening press, IE, 6/6, p.122

Hydrocarbon Research Inc.:
Oxygen plant, joint ownership, 5/30, p.64

Hydrometals Inc.:
More zip for zinc (new Hydro-T-Metal) alloy, 1/18, p.114

I

Idaho Maryland Mines Corp.:
Buys Rea divisions, B, 5/30, p.65

Ideal Electric & Mfg. Co.:
Induction motors, IE, 2/8, p.100

Illinois Bending & Mfg. Co.:
Tube end finishing machines, 3/14, p.105

Illinois Tool Works:
Acquires rights, components, 3/7, p.77

Induction Heating Corp.:
Automatic unit hardens trunnion bearings, 5/23, p.136

Inductotherm Corp.:
Induction melting unit, IE, 5/30, p.93
Power unit handles induction furnaces, IE, 4/25, p.132

Industrial Brownhoist Corp.:
Sold, B, 4/18, p.118

Industrial Finishes Co.:
Ep-Ak coating, IE, 4/4, p.168

Industrial Handling Equipment Co.:
BT fork type truck, IE, 3/28, p.106

Industrial Heating Equipment Assn.:
Elects, B, 1/25, p.63

Industrial Machinery Co.:
Hard surfacing paste for conveyors, 3/14, p.111

Ingersoll Milling Machine Co.:
Automatic cutoff saw, custom cuts heavy bar stock, 2/15, p.126
Powerful machine takes 700,000 lb workpiece, four milling heads, 6/27, p.81

Ingersoll-Rand Co.:
Automatic screw driver, IE, 3/28, p.109
Impactool, IE, 6/6, p.126

Inland Steel Co.:
Adds galvanized sheet line, 2/15, p.103
Buys Ajax units, B, 3/21, p.123
Caland Ore Co. Ltd. dedicated, 5/9, p.125
Coal conveyor line, 2/29, p.76
Copying machines for heat reports, 6/27, p.93
Electrolytic coil tinning line revamped, 5/23, p.115
Electronic weighing system for open hearth charge, 6/13, p.164
Iron ore from Latin countries, 2/8, p.47
Sinter plant co-ordinated from master controlroom, 5/16, p.110

Inland Steel Container Co.:
Drum shell manufacturing line, automatic, 5/23, p.132

Interlake Iron Corp.:
Sinter plant, Chicago, B, 5/2, p.62

International Business Machines Corp.:
Computer school (SRI), 6/13, p.103
Data processing system (MOS) controls production cycle, 6/6, p.55
Data Transceiver (telephone punched card), 3/28, p.41

International General Electric Co.:
Stover: Home laundry appliance foreign competition, 4/4, p.82

International Harvester Co.:
Buys Solar Aircraft, 3/21, p.134

International Nickel Co. Inc.:
Huntington plant, turntable crane moves tubing, 6/20, p.119

International Nickel Co. of Canada Ltd.:
Ore milling plant, Sudbury area, 4/25, p.93

International Staple & Machine Co.:
Stapling machine for carton bottoms, IE, 1/11, p.95

Interstate Steel Co.:
Athletes as salesmen, 5/9, p.87

Ionic Inc.
Unit handles pickle wastes, TO, 3/21, p.139

Ipsen Industries Inc.:
Heat treat furnace, graphite elements, IE, 3/21, p.200

I-T-E Circuit Breaker Co.:
Pleads guilty in price fixing, 4/25, p.53

J

Jack & Heintz Inc.:
Buys Roto-Lock Couplings, 5/2, p.63

Jacobs Mfg. Co.:
Collet chucks, IE, 5/16, p.125

Jacobsen Mfg. Co.:
Buys M-F plant, B, 3/14, p.80

Jessop Steel Co.:
Modern methods, machines update flat rolled products dept., 6/27, p.84

Johnson & Bassett Inc.:
Powered indexing positioner, IE, 5/30, p.90

Code: B—*Briefs;* IE—*Industrial Equipment;* TO—*Technical Outlook*

Jones & Lamson Machine Co.:
Lease plan, Whitmore suggests boom, 2/1, p.47

Jones & Laughlin Steel Corp.:
Annealing and pickling line, Youngstown plant, 5/2, p.62
Continuous annealing line helps tin plate users, Aliquippa Wks., 6/27, p.80
Contracts for 118 oven coke battery, Pittsburgh Wks., 1/11, p.66
Contracts for 20 ladles, B, 3/14, p.80
Contracts for soaking pits, B, 2/15, p.106
Electrolytic tinning line, halogen type, Aliquippa, 5/2, p.62
Salt bath descaling (stainless 300 and 400 Series), 6/20, p.122
Sinter plant facilities, B, 6/27, p.73
Steel service centers market all stainless, 5/16, p.135
Stewart (Warehouse Div.) surveyed by STEEL's air safari editors, 5/16, p.51

Joy Mfg. Co.:
Pendant switch, IE, 1/25, p.86

K

Kaiser Aluminum & Chemical Corp.:
Cleveland service center, 4/11, p.45 and 4/18, p.122
Coating line extended, 3/28, p.78
Foil mill, automatic gage, 4/11, p.94
High alumina bricks resistant to molten alloys, 6/27, p.96
Move pays off, plant near Ravenswood, W. Va., 6/13, p.220
Paint line processes 66 in. aluminum coil, 4/11, p.94
Overseas construction, 4/11, p.82
Seamless aluminum can, 6/27, p.82

Kaiser Refractories & Chemicals:
Changes names of Mexico Refractories and Missouri Refractories, 3/7, p.78
Export dept. consolidated, 4/18, p.122
Periclase plant, Midland, Mich., 5/2, p.63

Kaiser Steel Corp.:
Ashby: 1960 outlook, 1/11, p.26
Borden: Air safari interview, 5/23, p.85
"Progress Committee" study seven areas, 3/14, p.53

Kaplan Co., M. S.:
Buys Gary war plant, 2/29, p.49
Scrap shear, conveyor feed, IE, 2/29, p.100

Kearfott Co. Inc.:
Engineers trained, then hired, 2/15, p.66

Kelite Co.:
Cleaner removes oils, IE, 5/30, p.90

Kelsey-Hayes Co.:
Transfers wheelmaking operations to Navy plant, 3/21, p.110

Kelsey-Welding & Engineering Corp.:
Buys H. R. Kelsey Welding, 2/1, p.80

Kenco Mfg. Co.:
Electro-Safe presses, IE, 1/11, p.92
Series of 12 ton presses, IE, 2/29, p.104

Kennametal Inc.:
Carbide rolls reduce cost of making abrasive cutoff wheels, 3/14, p.102
Tungsten carbide bar aids machining, 2/15, p.123

Kennecott Copper Corp.:
Electrolytic copper refinery at Baltimore, 5/30, p.41

Kent-Moore Organization Inc.:
Buys Pyles, B, 4/18, p.118

Kenworth Products Inc.:
Enters metal spinning field, 3/21, p.123

Kilsby-Tubesupply:
New name, B, 4/4, p.124

Kimco Products Co.:
Vacuum cleaner, IE, 1/18, p.107

Koppers Co. Inc.:
Inhibitive primer resists contaminated atmosphere, IE, 5/16, p.120
Rice proposes ultrahigh pressure stacks, 3/21, p.148

Kozma Co., J. A.:
Aluminum melt. diecasting furnace, IE, 3/14, p.114

Kropp Forge Co.:
Buys Giant Grip Mfg., B, 3/14, p.77

L

Lake Erie Machinery Co.:
Bending brake, IE, 4/18, p.156

Lahr Machine & Tool Corp.:
Numerical control, turret drill, IE, 4/18, p.149

Lamb Co., F. Jos.:
Fabri-Tech storage, lowering unit, IE, 5/9, p.168

Lamson & Sessions Co.:
How to market a new bolt, 6/27, p.48

Landis Tool Co.:
Direct reading counter, IE, 2/8, p.96
Thread rolling heads, IE, 1/4, p.366

Lau Blower Co.:
Buys Viking, B, 5/30, p.64

Ledex Inc.:
New name, B, 3/28, p.78
Pasteups simplify drafting (preprinted artwork), 4/25, p.76

Leeds & Northrup Co.:
Buys Gassner and affiliate, 3/28, p.79

Leland Electric Co.:
Formed, B, 4/18, p.118

LeTourneau Inc., R. G.:
Fork truck used in unpaved areas, IE, 1/18, p.107

Lewin-Mathes Co.:
Service center, N. Y., 1/11, p.67

Lewis Bolt & Nut Co.:
Sells galvanizing plant, B, 2/29, p.76

Lewis-Shepard Products Inc.:
Carry-all truck, IE, 2/29, p.102
Foot lift truck, IE, 4/11, p.110
Platform lift truck, IE, 2/15, p.149
Truck-tier, IE, 1/11, p.90

Lima Electric Motor Co.:
Gearshift drive unit, IE, 3/21, p.181
Generator ratings, IE, 6/27, p.98

Lincoln Electric Co.:
Induction motors protected by thermosetting plastic, 4/25, p.131
Innershield, cored wire system-automatic welder, 6/20, p.116
Resistance buttwelder for wire, IE, 3/7, p.118
Trackless carriage guides welding gun, IE, 5/16, p.130
Welder-stable arc, IE, 2/1, p.107

Lindberg Engineering Co.:
Induction heating unit, IE, 4/4, p.170

Linde Co.:
Builds flame process plant, B, 4/18, p.118
Continuous welded rail plant, Birmingham, 5/2, p.63
Natural gas torch cuts heavy sections, IE, 5/30, p.93
Refractory metals' future crystallized, new arc fusion crystal growing process, 6/20, p.68
Shape cutting units guided by sketches, IE, 5/16, p.125

Line Materials Industries:
Expands, B, 3/21, p.128

Link-Belt Co.:
Indianapolis bearing plant: Automatic chip handling, oil recovery system, 1/18, p.90
Indianapolis bearing plant, completely automatic handling, 5/30, p.69
Tool mills four slots in locknuts, bearing plant, 6/20, p.112
Unit hurls material into trucks, IE, 3/14, p.122

Lippincott & Margulies Inc.:
Margulies: Corporate symbols inadequate, 5/6, p.45

Little Giant Products Inc.:
Lift truck attach. dumps drop bottom boxes, IE, 4/4, p.168

Lockheed Aircraft Corp.:
Buys Colby firms, B, 3/14, p.88
Flash buttwelds in aluminum are safe, reliable (new tech. for Air Force), 3/14, p.110

Lodge & Shipley Co.:
Constant speed unit, IE, 5/16, p.117

Loma Machine Mfg. Co. Inc.:
Billet cutoff, IE, 3/14, p.113
Flying saw attachment means continuous casting, 2/22, p.86

Lone Star Steel Co.:
10 year forecast (import-exports) by E. B. Germany, 5/30, p.25

Lord Chemical Corp.:
Wheelabrator buys interest, B, 1/11, p.67

Lord Mfg. Co.:
Damping material may reduce metal fatigue, 3/7, p.88

Lordstown Tool & Die Co.:
Centerless grinder, IE, 2/8, p.103

Louisiana Power & Light Co.:
Control board for data-computor system, 1/25, p.25

Lovejoy Flexible Coupling Co.:
Variable speed pulleys, IE, 3/14, p.126

Lukens Steel Co.:
Clad metals, demand for new markets, 6/6, p.56

Luntz Iron & Steel Co.:
Scrap shear for railroad car, 5/2, p.122

Luria Bros. & Co. Inc.:
Moves headquarters, B, 1/11, p.67
Scrap future tied to research, 2/15, p.159
Subsidiary changes name to Luria International, 3/28, p.78

Mc

McCormick Steel Co.:
Ducommun merger discussed, 4/18, p.116

McDowell Co. Inc.:
Dwight Lloyd Div. builds sinter plant with master controlroom for Inland, 5/16, p.110

McJunkin Corp.:
Absorbs subsidiary, Chandler-Boyd, 2/1, p.80

McKay Machine Co.:
Contracts for Ohio Seamless tube mills, 5/23, p.115

McKee & Co., Arthur G.:
Mexican, Brazilian units, 4/4, p.121

McKinsey & Co. Inc.:
How to checkmate whitecollar unions, 2/22, p.24
Management productivity, survey, 3/28, p.59

McLouth Steel Corp.:
Oxygen converter, B, 6/13, p.141

M

M & M Tool & Mfg. Co.:
Precision milling table, IE, 1/18, p.103
Rotary indexing table, IE, 2/29, p.102

Magnaflux Corp.:
Test may broaden honeycomb use (thermographic inspection), 5/23, p.134
Ultrasonic thickness tester, portable, IE, 4/25, p.132

Magnetic Amplifiers Inc.:
Adjustable voltage, IE, 3/7, p.104

Mahon Co., R. C.:
Resurfaces bell and hopper of blast furnace stack, 4/25, p.116

Mallory & Co. Inc., P. R.:
Centralizes groups, B, 4/25, p.93

Mallory Metallurgical Co.:
High density metal cold worked, IE, 1/4, p.364

Mallory-Sharon Metals Corp.:
Acquired by Reactive Metals, 6/6, p.86

Malsbary Mfg. Co.:
Steam cleaner, IE, 3/14, p.124

Manpower Inc.:
Employment trend, 1st quarter, 1/11, p. 26; 2nd quarter, 4/18, p.73
Younger labor force, challenging problems, 2/8, p.45

Marlin Firearms Co.:
Machinability improved by modified steel type, 2/22, p.88

Marmon-Herrington Co.:
Buys Long Co., 3/28, p.79

Marquardt Corp.:
Magnesium alloy hot formed for missiles, heated mandrel, 2/15, p.138
What is scrap worth? 2/15, p.86

Marshall Products Co.:
Hardness tests on vacuum furnace, IE, 3/14, p.116

Martin Co.:
Aluminum extrusions make Titan skin, 2/1, p.86

Materials Electronic Products Inc.:
Thermoelectricity report, 2/29, p.57

Mather Spring Co.:
Buys Lus-Trus, B, 3/14, p.88

Mattison Machine Works:
Grinders, IE, 4/11, p.107; 5/16, p.121; 6/13, p.175; 6/27, p.96

Maxson Corp., W. L.:
Merger, B, 3/21, p.134

Maytag Co.:
Ideas pay dividend for work simplification, 2/29, p.53
Phone salesman (Fred Maytag), 5/23, p.77

Merit Co.:
Portable spotwelder, water cooled, IE, 3/7, p.118

Merz Engineering Inc.:
Rocket motor cases . . . handle with care, 2/22, p.84

Mesta Machine Co.:
Plate mill contract, Gary Wks., 3/14, p.51

Metal & Thermit Corp.:
Arcwelder, portable, IE, 6/6, p.128
Arcwelder, wide range, IE, 3/7, p.118
Stabilizer converts ac, dc welders, IE, 4/4, p.162

Metalclean Equipment Co.:
Ultrasonic cleaner, IE, 2/22, p.91

Metal Coating Corp.:
Buys galvanizing plant, B, 2/29, p.76

Metal Control Laboratories Inc.:
Buys Pacific Testing, B, 1/11, p.67

MetalCraft Co.:
Welder, IE, 2/22, p.94

Meta-Dynamics: See Cincinnati Milling

Metal Forming Corp.:
Expands, B, 3/7, p.77

Metals Disintegrating Co. Inc.:
Abrasives studies, 2/1, p.89

Michigan Tool Co.:
Coolant used straight or blended, IE, 2/22, p.91
Enterprise Div., 5/23, p.121
Gear shaving unit, IE, 6/20, p.126

Micro-Path Inc.:
Forms instruments div., B, 6/13, p.144

Midland-Ross Corp.:
Surface Combustion: Computer aids in design of gale velocity furnace, 2/1, p.84
Surface Combustion: Carborizing furnaces at Ford, 5/2, p.72

Mid States Welder Mfg. Co.:
Dot welding, new tech., 1/18, p.89

Code: B—*Briefs;* IE—*Industrial Equipment;* TO—*Technical Outlook*

Midwest Steel Corp.:
$100 million plant, Portage, Ind.: Midwest Steel to roll in '61, 6/20, p.69
Annealing line contracts, B, 6/27, p.73

Michle-Goss-Dexter Inc.:
Buys Fidelity Instrument, 3/28, p.79
Feeder, scrap separator raise salvage profit, 2/29, p.95

Michle Co.:
Tape control coding standard sought, 3/7, p.97

Milford Rivet & Machine Co.:
Rivet machine for cluster installation, IE, 1/4, p.362

Miller Electric Mfg. Co. Inc.:
Diesel drives for welder, IE, 2/22, p.90
Tig welder, five overlapping range, IE, 3/21, p.176
Welder, IE, 5/2, p.90
Welder-powerplant, IE, 5/2, p.84

Milman Engineering Co.:
Precision tapping unit, IE, 3/7, p.119

Milo Mfg. Co.:
Cutting and duplicating machine, IE, 2/15, p.144
Torch cutting unit, IE, 2/8, p.96

Minerals & Chemicals Corp. of America:
Merges with Philipp, B, 5/9, p.125

Minerals Engineering Co.:
Buys refining plant, B, 6/27, p.73

Mingo Oxygen Co.:
Formed by: 4/18, p.111

Mining & Mfg. Co.:
Barrel finishing machines, IE, 5/16, p.125

Minneapolis-Honeywell Regulator Co.:
Data processing system, 4/18, p.73
Renames Beltsville operation, 6/6, p.86

Minneapolis-Moline Co.:
Buys fork truck line, B, 2/29, p.76
Buys John Morrell, B, 2/22, p.65

Minnesota Mining & Mfg. Co.:
Adhesive bond for assembling cast pump parts trims rejections, 1/11, p.87
Oil resistant adhesive, IE, 1/25, p.87
Thermo-Fax copying machines, 6/27, p.93

Mitchell-Bradford Chemical Co.:
Rust preventive in water rinse, IE, 1/25, p.82

Mitsubishi: See Fate-Root-Heath

Mobay Chemical Co.:
Urethane foam: Glutinous plastic applied as core for curtain walls, 5/16, p.104

Mobilift Co.:
Lift trucks-automatic drive, IE, 5/23, p.156

Modern Mfg. Co.:
Buys Super Slugger, B, 4/11, p.82

Molloy Mfg. Co.:
Evinrude buys shafts for cold rolling splines, 5/16, p.114

Moore Special Tool Co.:
Borer, grinder use international inch, IE, 4/18, p.150

Morgan Engineering Co.:
Canadian outlet, B, 5/30, p.65
Crane & Mill sales subsidiary, 4/25, p.100

Morris Machine Tool Co.:
Revolving trunnion machine, 4/4, p.157
Rotary indexing machine, IE, 5/16, p.118

Morrison Machinery & Eng. Corp.:
Cross slide rotary table, IE, 4/18, p.158

Morse Chain Co.:
C-flange gearmotor, IE, 6/13, p.186

Mulfab Corp.:
Beats the price squeeze, 6/13, p.113
Conveyorized production lines speeds structural fabricating, 1/11, p.70

Murray-Way Corp.:
Buffing, grinding unit, IE, 3/14, p.124
Deburring machine, IE, 5/30, p.90
Simplified lathe, IE, 5/16, p.118

N

N.R.K. Mfg. & Engineering Co.:
Superalloy springs survive brazing heat, 2/22, p.68

Nadel Tool & Mfg. Co. Inc.:
Power press feed doesn't mar polished metal, IE, 4/4, p.165

Nankervis Co., George L.:
Packaged disposal unit, IE, 3/21, p.168

Narmco Resins & Coatings Co.:
Plastic putty, IE, 1/4, p.366

Nash Co., J. M.:
Buys Peerless Machine, 6/6, p.94

National Broach & Machine Co.:
Red Ring finishing broaches, IE, 4/18, p.156

National Carbon Co.:
Graphite cloth for honeycomb panel brazing, 2/22, p.74

National Cash Register Co.:
Vibratory deburring equipment, means savings, 5/2, p.70

National Cylinder Gas:
See Chemetron

National Electric Welding Machine Co.:
Seamwelder for drums, IE, 3/21, p.188
Shells processed for Chrysler starter motors, 6/20, p.80

National File Co.:
Krome-King electroplating attach., IE, 3/21, p.188

National Malleable & Steel Castings Co.:
Buys Hill, Hubbell, B, 6/20, p.96

National Research Corp.:
Space Vacuum Lab, 4/4, p.121

National-Standard Co.:
Athenia doubles strip output at Clifton mill, 6/27, p.72
Plant expenditures, U. S.-Overseas, 5/2, p.62
Superalloy spring (wire) survives brazing heat, Niles, Mich., 2/22, p.69

National Steel Corp.:
Expansion program, $300 million project (contracts), 2/15, p.103
Midwest to roll in '61, Portage, Ind., plant, 6/20, p.69
Research center bldg., B, 5/2, p.62

National Steel & Shipbuilding Co.:
Organized, B, 1/25, p.62

National Ultrasonic Corp.:
Ultrasonic cleaning unit, IE, 3/21, p.194

National-U. S. Radiator Corp.:
Crane buys, 1/11, p.66; new name, 2/22, p.64

Nationwide Leasing Co.:
Equipment leasing forecast, 5/9, p.88
Production leasing grows, 3/21, p.84
Small firms use, 3/28, p.41

Nebel Machine Tool Corp.:
Lathe model, IE, 2/1, p.101
Standard duty engine lathe, IE, 5/23, p.153

Nelco Tool Co.:
Expands, B, 3/28, p.78

New Jersey Zinc Co.:
Zinc alloy tests (Hydro-T-Metal), 1/18, p.114

Niagara Machine & Tool Works:
Press brake line redesign, IE, 1/11, p.89

Nlforge Corp.:
Titanium-aluminum castings poured in same mold, 2/15, p.74

Non-Linear Systems Inc.:
Small mill cuts slots for digital readout systems, 4/11, p.106

North American Aviation Inc.:
Atomics International Div.: Lathe bed makes ideal welder base, 2/29, p.90
Electron beam weld, 20 to 30 ft for B-70, TO, 6/13, p.155
Hot sizing helps alloys meet closer tolerances, 1/25, p.70
Labor settlement, two-year pact, 6/27, p.35
Solved: Mach 3 manufacturing problems, 1/18, p.86
Rocket engine powers Saturn, manned flights to moon, 2/15, p.75
Supersonic air travel predicted, 4/25, p.56

North American Coal Corp.:
Develops process to retrieve aluminum oxide from coal mine waste, 6/6, p.84

Northeast Ohio Machine Builders Inc.:
Stenciling machine marks bars and pipes, IE, 5/9, p.164

Northern Illinois Machinists:
Hydraulic milling machine, IE, 6/20, p.128

Northrop Corp.:
Automatic brazing of honeycombs, radiant quartz lamps, 4/25, p.69 and Infrared, 5/30, p.84
Buys Acme Metal Molding, B, 6/27, p.73
Paperwork, automated control system, 2/29, p.39

Northwestern Steel & Wire Co.:
Magnetic plier and crane handles plates, structurals, 6/6, p.108

Norton Co.:
Johnson reviews grinding trends, stock removal jobs, 6/6, p.104
Surface grinder, IE, 3/14, p.114

Nu-Era Corp.:
Tube bender tape controlled, 2/1, p.98

O

Ohio Crankshaft Corp.:
Positioner for heat treating castings, 6/13, p.156

Ohio, Robbins & Myers Inc.:
Frequency motor alternators, IE, 6/27, p.96

Ohio Seamless Tube: See Copperweld

Oilgear Co.:
Transmissions designed for 1 hp, IE, 6/13, p.189

Old Ben Coal Corp.:
Benton, Ill., mine opened, ceiling hung belt conveyor, 6/20, p.55

Olin Mathieson Chemical Corp.:
Tandem cold reduction mill, Omal, O., 2/22, p.65

Oliver Corp.:
Farquhar Div. sold, 4/18, p.118

Olofsson Corp.:
Cam contouring unit, IE, 2/8, p.95

Onsrud Machine Works Inc.:
Buys press line, B, 6/27, p.72

Orchard Paper Co.:
Contact sheet prevents water stains on aluminum, IE, 1/4, p.365

Ormet Corp.:
Collisson: Management productivity, 3/28, p.59

Otis Elevator Co.:
Sideloading Traveloader truck, IE, 2/1, p.105

Outboard Marine Corp.:
Evinrude cold rolls splines on hardened 410 stainless shafts, 5/16, p.114

P

Pacific Extrusions Inc.:
1000 ton press installed, B, 6/13, p.141

Pacific Iron & Steel Corp.:
Merged, B, 1/18, p.81

Palmer-Shile Co.:
Pallets, IE, 6/20, p.132

Panama Canal Co.:
Contract bids: See Fate-Root

Pangborn Corp.:
Airplanes for customer service, 4/25, p.93
Dust collector-fiber glass filter, IE, 1/25, p.84
Mechanical descaler (bars for grating), 2/29, p.85

Park Drop Forge Co.:
Customers, SIC groups, marketing approach, 1/11, p.39

Parkersburg Rig & Reel Co.:
Electronically controlled cutter reduces template costs, 5/23, p.133

Paslode Co.:
Buys Crofoot, B, 2/8, p.72

Peer Inc.:
Buttwelder, IE, 5/9, p.164

Pennsylvania Engineering Corp.:
Converter melt process produces ingots, 5/2, p.76

Pereny Equipment Co. Inc.:
Rotary tube furnace, IE, 3/7, p.104

Perfecting Service Co.:
Free machining stainless missile part, 1/25, p.69
Plastic trucktrailer for food hauling, 6/20, p.55

Phelps Can Co.:
Buys Nestle, B, 1/25, p.62

Phelps Dodge Corp.:
Signs union agreement, 2/15, p.182

Philip Morris Inc.:
Merges with A.S.R. Products, 3/7, p.78

Philipp Bros. Ore Corp.:
Merges, B, 5/9, p.125

Pine Engineering Co. Inc.:
Tube bending presses, IE, 4/18, p.149

Pitman-Dunn Laboratories:
Diamond abrasive eases metallographer's task preparing specimens, 2/8, p.80

Pittsburgh Chemical Co:
Expands in Kentucky, B, 4/18, p.114
Sulfuric acid plant, B, 5/30, p.64

Pittsburgh Coke & Chemical Co.:
Chemical firm formed, 4/4, p.124

Pittsburgh Steel Co.:
Halts wildcat strike, fires workers, 4/18, p.71
Raw Material program, buys ore mines, 2/29, p.49
Refuses steel settlement, 1/11, p.37

Plymouth Locomotive Div. See Fate-Root-Heath

Pollock Co., William B.:
Koppers contract, B, 6/27, p.73

Polymer Corp.:
Large shapes open nylon market, 2/1, p.90
Plastic powder coating for metals, 3/7, p.82

Pope Machinery Corp.:
Anocut electrolytic grinding spindle, IE, 3/7, p.111
NEMA precision motors, IE, 1/25, p.86

Porter Company Inc., H. K.:
Alloy steel recuperators preheat soaking pit air, Conners Steel, 6/13, p.166
Buys Allied Paint Mfg., B, 6/20, p.96
Division renamed, B, 3/7, p.78
Enlarges refractory plants, Wellsville and Bessemer, 6/20, p.92
Expansion and modernization, 2/15, p.180
Mechanized clay mine, 6/20, p.93
Riverside Metal Wks. modernization, 5/30, p.64

Portsmouth Corp.:
Detroit Steel buys, 2/22, p.35

Power Reactor Development Co.:
Court of Appeals turns down permit for Detroit reactor, 6/20, p.56

Pratt & Whitney Co. Inc.:
Approach to import-exports, 5/23, p.89

Precision Metalsmiths Inc.:
Ceramic shell molding, plastic patterns, 5/9, p.140

Precision Welder & Flexopress Corp.:
Atmosphere furnace welding gun, IE, 2/8, p.95

Prenco Mfg. Corp.:
Casting impregnator sealing machine, IE, 5/2, p.84
Cyanide waste incineration, reduces toxic risks, 2/8, p.93

Press Automation Systems Inc.:
Packaged feeder unit for dies, IE, 3/21, p.170
Swinging arm press unloader, IE, 6/13, p.186

Pressure Blast Mfg. Co. Inc.:
Wet blast unit, IE, 2/1, p.107

Price Corp., D. W.:
Merges, new firm Avdel, 4/25, p.100

Production Engineering Co.:
Nine stand rolling mill, IE, 4/11, p.110

Production Machine Co.:
Grinding attachment, IE, 4/25, p.131

Products Supply Co.:
Motorized fixture, IE, 2/8, p.98

Progressive Welder & Machine Co.:
Roll spotwelder, IE, 4/11, p.116
Studwelder uses machine screw products as studs, IE, 5/30, p.90

Pullman Inc.:
Aluminum gondola cars, 4/11, p.44
Auto piggyback carrier, 2/15, p.63
Closes Worcester passenger car plant, 4/18, p.114

Punch Products Corp.:
Hole punching press, IE, 4/18, p.154

Q

Quelcor Inc.:
Vinyl resin protects structurals, IE, 1/4, p.365

R

Radiation Engineered Services:
Radiographic equipment, IE, 2/8, p.103

Radio Corp. of America:
EDP computer lines, 4/18, p.73
Sarnoff predicts electronic market, 3/7, p.39
Wege sees merger of science and engineering, 3/7, p.39

Ramco Equipment Corp.:
Dry-off ovens, IE, 1/18, p.107

Rampe Mfg. Co.:
Barrel finisher, IE, 2/29, p.98

Ransome Co.:
Enters welding field, B, 1/25, p.63

Rapids-Standard Co. Inc.:
Gravity conveyor portable, IE, 1/25, p.84

Raymond Corp.:
Pallet truck hydraulic, IE, 6/27, p.98

Raytheon Co.:
Changes name, Indus. Tube Div., 1/18, p.81

Rea Co., J. B.:
Sells divisions, B, 5/30, p.65

Reactive Metals Inc.:
Formed, B, 6/6, p.86

Reading Crane & Hoist Corp.:
Hoist for oxygen jet lances, 2/15, p.128

Reliance Electric & Eng. Co.:
High response motors, IE, 2/29, p.102
Weatherproof motors, IE, 6/6, p.122

REM Sales Inc.:
Cold heading unit, IE, 1/25, p.82
Duplex miller, IE, 2/15, p.144

Remington Rand Co.:
Univac aids 200 businessmen in simulated problem of management marketing, 3/14, p.53

Republic Foil Inc.:
Etching plant, B, 3/7, p.78

Republic Steel Corp.:
Buys government-owned blast furnace and sintering plant, 5/2, p.62
Capital outlays for '60, 3/7, p.48
Expands metal lath facilities, Truscon Div., 5/16, p.86
Coke conveyor, Cleve. plant, 2/1, p.71
Patton: Ten commandments of communications, 6/6, p.44
Political education, employee program, 2/29, p.38
Sales training for stainless, OMI, 6/13, p.103
Titanium sheets flatter, strength-to-weight ratio advantage, 4/4, p.138
Tube sizing mill order, Chicago, 4/11, p.82
White wins Fairless award, 2/15, p.65

Republic Supply Co. of California:
Offers specialty metals, B, 3/28, p.78

Research Development Corp.:
Bassett heat treat process (thermomagnadynamics), 5/2, p.82

Resources & Facilities Corp.:
Sells world markets, 2/8, p.49

Reuland Electric Co.:
Motor reducer, IE, 2/8, p.98

Revere Copper & Brass Inc.:
Price cut-sheets, 4/18, p.72

Reynolds Metals Co.:
Arrow Brands purchase, antitrust charge, 2/15, p.182 and 2/22, p.35
Builds special traveling gantry welding units, 3/28, p.96
Centralizes curtain wall units, 3/14, p.80
Drawn tubing facilities, B, 1/11, p.66
Forms Packaging Research Div., B, 1/11, p.66
Price squeeze denied, 5/9, p.86
Sets up 18 "one stop shopping centers," 4/4, p.82
Shuttling molten aluminum, 6/27, p.60

Rice Pump & Machine Co.:
Punch and die maker, IE, 4/18, p.150

Richardson Scale Co.:
Flat belt conveyor, IE, 1/18, p.104

R-O Mfg. Co.:
Optical comparator, IE, 3/14, p.120

Robbins & Myers Inc.:
Designers use computers instead of slide rules, 6/20, p.110
Integral ac-dc motors, IE, 3/28, p.106
Moyno-small pumps, IE, 2/1, p.102
Series wound motors, IE, 3/14, p.126
Small ac motors, IE, 5/23, p.167

Robertshaw-Fulton Controls Co.:
Buys instrument line, B, 3/21, p.123

Robotron Corp.:
Canadian subsidiary, B, 3/14, p.77
Proximity switch press control, IE, 3/14, p.114
Welding control and power system, IE, 4/11, p.110

Rockford Machine Tool Co.:
Hydraulic shaper-cycle includes loading, IE, 6/20, p.125
Metal cutting slotter pendant control, IE, 5/16, p.117

Rockwell Co., W. S.:
Gas air heaters, IE, 6/13, p.181
Belt-disc finishing unit, IE, 5/2, p.86
High speed drill press, counterbalanced quill, IE, 1/11, p.93
Metal cutting lathe, IE, 6/20, p.126
Radial drill press, IE, 2/1, p.105
Rockwell back from Asian trip, plugs Far East investments, 4/4, p.84

Rodney Metals Inc.:
Sendzimir mill, B, 2/8, p.72

Rohr Aircraft Corp.:
Brazing honeycomb panels, graphite cloth speeds heat cycle, 2/22, p.74
High speed process for brazing stainless honeycomb, 2/15, p.131

Rolled Steel Corp.:
Waldman predicts soar in galvanized steel, 5/16, p.42

Roth Corp.:
Buys White-Roth, 4/25, p.100
Unit rotates coil, IE, 5/30, p.98

Roto-Lock Couplings Inc.:
Sold, B, 5/2, p.63

Royal Master Grinders Inc.:
Centerless grinder for carbides, IE, 5/23, p.160

Ruico Engineering Inc.:
Steel rule dies, 5/9, p.158

Rust Furnace Co.:
Markets Elpits (Oslo firm), electric soaking pits, 5/23, p.138

Ryan Aeronautical Co.:
Explosive forming setup, pic., 6/6, p.104
Quick die quench shatters forming bottleneck, 2/15, p.134
Wrap (spotwelding) strengthens rocket chambers, 2/8, p.84

Ryan Industrial Inc.:
Tankmaker [illegible] on foundation of product [illegible]bility, cryogenic storage tanks for liquefied gases, 5/16, p.96

Ryerson & Son Inc., Joseph T.:
Price cuts, 2/1, p.114 and 6/13, p.203

S

St. Lawrence Steel Corp.:
Forms company to reopen mill, 2/29, p.49

Saco-Lowell Shops:
Auto muffler tubes, patterned perforations made by hit-skip press, 2/22, p.80
Automatic unit (Ther-Monic) hardens trunnion bearings, 5/23, p.136

Safway Steel Products Inc.:
Buys Beatty Scaffold, B, 4/11, p.82

Sales Service Mfg. Co.:
Bed Havir presses, IE, 1/4, p.364
Oscillating belt grinder, IE, 4/18, p.156

Sawbrook Steel Castings Co.:
Buys Badall Eng., B, 2/8, p.72

Schwarzkopf Development Corp.:
Tungsten ingots, indirect sintering, 1/25, p.72

Scinky Bros. Inc.:
Electron beam welding nears production level, 5/23, p.150
Tig fusion welder, IE, 3/28, p.105

Scovill Mfg. Co.:
Aluminum sheet expansion program, 2/29, p.76
Outsized extrusion press produces bigger tubes for heat exchangers, 2/8, p.93

Seiberling Rubber Co.:
Ark. plant, B, 3/21, p.131
Expands, B, 4/4, p.121

Selas Corp. of America:
Automatic brazing machines, 3/21, p.162
Hydrogen unit offers savings to metalworkers, packaged processing system, 1/11, p.76

Service Machine Co.:
Rousselle press, IE, 4/4, p.160

Servo Corp. of America:
Buys Electro-Pulse, B, 2/1, p.80

Sharon Steel Corp.:
Order processing computer, 1/25, p.62

Shaw Instrument Corp.:
Two color pyrometer tells correct temperatures above 1400°, 4/4, p.144

Sheffield Corp.:
Measuray gage x-ray, IE, 4/18, p.160

Shuler Equipment Co.:
Buys Magic City Iron, B, 5/2, p.63

Sidney Machine Tool Co.:
Lathe 60 hp, IE, 1/25, p.87

Sierra Drawn Steel Co.:
Merged, B, 1/11, p.67

Sierra Metals Corp.:
Buys vacuum furnace, 4/11, p.82

Sifco Metachemical Inc.:
Dalic plating process, 3/28, p.98
Dalic power pack, IE, 4/11, p.115

Simonds Abrasive Co.:
Faster grinding reduces slab conditioning costs, 2/22, p.71

Simplex Machine Tool Corp.:
Moves, B, 2/22, p.65

Simplex Wire & Cable Co.:
Expands, B, 4/11, p.82

Singer Mfg. Co.:
How Singer sells the world market, 5/9, p.105

Skidmore Gear Co.:
Changes hands, officers, 4/18, p.116

Skidmore-Wilhelm Mfg. Co.:
Calibrating unit, IE, 2/8, p.103

Skinner Chuck Co.:
Buys Horton chuck line, B, 5/30, p.65

Smith Corp., A. O.:
Overseas subsidiary, 4/11, p.82
Pipe order, 2/29, p.48
Portable dc welder, IE, 4/11, p.116

Smith-Corona Marchant Inc.:
Transfers operations, B, 4/18, p.111

Smyth & Murphy Associates:
Supervisors' incentive programs, 3/7, p.38

Snap-On Tools Corp.:
Hand tool costs, survey, 2/22, p.70

Solar Aircraft Co.:
Sold, B, 3/21, p.134

Solar Nitrogen Chemicals Inc.:
Ammonia plant, B, 5/9, p.136

Somers Brass Co.:
Coil tilter, 5/23, p.140

Southeast Steel & Wire Corp.:
Enters wire mesh field, B, 2/15, p.108

Southern California Edison Co.:
Plans atomic power plant, 5/9, p.87

Sovereign Resources Inc.:
Florida steel mill, 6/13, p.101

Spartan Corp.:
Builds in South, B, 5/30, p.64

Special Engineering Service Inc.:
Wire feed, cutoff unit, IE, 4/4, p.162

Spraying Systems Co.:
Airless spray gun, IE, 4/4, p.170

Spee-Flo Co.:
Airless spray gun, IE, 2/15, p.149

Sperry Rand Corp.:
Sergeant, new Army missile, 5/9, p.108

Square D Co.:
EC&M Div.: Control package expedites mill revamp, 3/7, p.84
Electronic brain control system, TO, 3/7, p.81

Stamco Sales Inc.:
Formed, B, 3/7, p.77

Standard Electrical Tool Co.:
Speed lathe, IE, 5/16, p.126

Standard Pressed Steel Co.:
Centerless grinder with crush wheel dressings, 2/29, p.92
Sid Matthews, pic., buys equipment, 2/22, p.46

Standard Railway Equipment Mfg. Co.:
Merges Pacific Iron, B, 1/18, p.81
Renamed, B, 4/11, p.82

Stauffer Chemical Co.:
Research center, Calif., B, 5/2, p.63

Stearns Electric Corp.:
Miniature clutch-brake, IE, 5/2, p.88

Stearns Magnetic Products:
Magnets-aluminum field coils, IE, 3/21, p.182

Stevenson Co.:
Vibrator for mixing, IE, 5/23, p.162

Stokes Corp., F. J.:
Automatic molding presses, IE, 2/22, p.89
Automatic transfer press, IE, 3/21, p.170
Foundry degassing equipment, IE, 6/20, p.126
Molding presses for plastics, IE, 6/13, p.178
Vacuum melt furnaces packaged in 2-sizes, IE, 3/7, p.112

Stolper Steel Products Corp.:
Buys Plasticon, B, 5/30, p.65

Stonega Coke & Coal Co.:
Mechanization boosts coke oven output, 1/18, p.94

Storm Seal Industries Inc.:
Cleveland plant, B, 5/9, p.134

Stran-Steel Corp.:
Metallic Building purchase, anti-trust charge, 2/22, p.35

Stromberg-Carlson:
See General Dynamics

Studebaker-Packard Corp.:
Australian assembly plant, 3/14, p.40
Auto Union-DKW car, pic., 2/8, p.60
Battle of compacts, 5/23, p.101
Overseas market extended, 3/21, p.110

Sunbeam Corp.:
Buys John Oster Mfg., 3/7, p.78

Sunbeam Equipment Corp.:
Atmosphere furnace for stainless tube annealing, 2/8, p.82

Sundstrand-American Broach:
Battery powered magnet, IE, 6/27, p.98

Sundstrand Corp.:
Buys Thayer Scale, B, 1/25, p.63

Superior Pneumatic & Mfg. Inc.:
Lock seam adapter folds metals, IE, 1/4, p.362

Surface Combustion: See Midland-Ross

Swayne, Robinson & Co.:
Adds aluminum casting line, B, 1/11, p.67

Sweetland Co.:
Buys Hydraulic Equip., B, 3/14, p.88

Swindell-Dressler Corp.:
Orcarb process, direct reduction, at pilot plant, 1/11, p.40

Sylvania Electric Products Inc.:
Expands germanium output, B, 3/21, p.123
Navy award, 3/28, p.78
Slip casting tech. widens powder metallurgy: Hausner and Poster, 2/15, p.120

Symington Wayne Corp.:
Buys oil equipment line, B, 2/29, p.76

T

Taylor Winfield Corp.:
Press type welder, IE, 5/2, p.84

Techalloy Co. Inc.:
Buys strip mill, 3/28, p.78

Temco Inc.:
Automobile welding joins tanks at 175 ipm (glass lined water heaters), 6/20, p.116

Temco Aircraft Corp.:
Merges Ling-Altec, 5/23, p.124

Temescal Metallurgy Corp.:
Electron beam melting furnace, refinement economies, 6/6, p.98

Textron Electronics Inc.:
Buys Electronic Research, B, 6/20, p.96

Buys G-C Electronics and Schafer, 3/7, p.78

Thermo Electric Mfg. Co.:
Furnace accessories, IE, 3/7, p.114

Thompson Ramo Wooldridge Inc.:
60 Minuteman program, 2/22, p.36
Buys Good-All Electric, B, 4/4, p.132

Thriftmaster Products Corp.:
Angular drill head, IE, 2/1, p.107

Timken Roller Bearing Co.:
Isothermal pits: Transformation faster with controlled cooling, 4/4, p.156

Tinius Olsen Testing Machine Co.:
Brinell hardness tester, IE, 5/16, p.120

Tool Steel Gear & Pinion Co.:
Buys Badall Eng., 2/29, p.77

Torit Mfg. Co.:
Throwaway glass filter, IE, 3/7, p.121

Toro Mfg. Corp.:
Aluminum anodizing process, 2/29, p.96

Toronto Transit Commisson:
Blast cleaner for bus wheels, 3/28, p.102

Torsion Balance Co.:
Hardness tester, IE, 2/1, p.106

Towmotor Corp.:
p.132
Fork lift-right angle stacking, IE, 6/6, p.120

Trabon Engineering Corp.:
Gear spray valve for centralized lube, IE, 1/11, p.90
Gun operated centralized grease system, IE, 3/7, p.116

Tree Tool & Die Works:
Hydraulic tracer control, IE, 6/20, p.134

Trent Tube Co.:
Atmosphere furnace automates stainless tube annealing, 2/8, p.82

Truck Equipment Co.:
Buys Ajax Iron, B, 5/2, p.63

True-Trace Corp.:
Lathe tracing attach., IE, 4/25, p.132

Tuff-Kote Asphalt Products Inc.:
New name, B, 1/18, p.81

Turnbuckles Inc.:
Forms Wirecraft Div., B, 3/7, p.77

Tyson Bearing Co.:
Expands, B, 2/22, p.64

U

Ultrasonic Industries Inc.:
Cleaner-½-gal capacity, IE, 3/7, p.116

Union Carbide Corp.:
Auto exhaust purifying unit, 5/9, p.85
Italian plant operated by Celene, 4/18, p.111

Union Carbide Metals Co.:
Price cut on ferroalloy products, 2/1, p.115

Union Carbide Nuclear Co.:
Expands, facilities, B, 2/8, p.72
Polyethylene production outlook, 4/11, p.46

Union Steel Products Co.:
Palletainer, IE, 5/30, p.90

Union Tank Co.:
Buys interest in Scottish firm, 4/11, p.83

Union Twist Drill Co.:
German subsidiary builds for American market, 3/7, p.53

Unit Crane & Shovel Corp.:
Buys Bay City Shovel, 4/4, p.128

United Aircraft Corp.:
Hamilton Standard buys interest in Italian firm, 1/11, p.66
Hamilton Standard tool cuts, welds, (electric beam unit-German), 1/25, p.77

United Aircraft Products Inc.:
Buys Western Way, B, 1/25, p.63

United Conveyor Corp.:
Valve for abrasive slurry, IE, 1/18, p.104

United Engineering & Foundry Co.:
Steel mill contract, English firm, 6/6, p.86

U. S. Burk Machine Tool:
Compound swivel head for vertical mill, IE, 1/18, p.110

U. S. Electrical Motors Inc.:
Hydraulic pump motor, IE, 3/28, p.106
Resin protects windings, IE, 4/25, p.130
Variable speed drive, IE, 5/23, p.159

U. S. Expansion Bolt Co.:
Western subsidiary, B, 5/2, p.62

U. S. Rubber Co.:
Humphreys: "Go global," 6/27, p.34

United States Steel Corp.:
1st quarter report, 5/2, p.39
1960 forecast by Blough, 6/20, p.53
American Bridge: Urethane foam, plastic for fabricating panels, 5/16, p.104
AS&W: Exhibit "The Wonderful, Wacky World of Sleep," mattresses and box springs, 4/4, p.82
Aircraft-missile tough steel (strength-weight ratio) is USS Strux, 1/18, p.96
Application research dept. directed at six markets for customer use (Electromechanical Engineering Bldg. at Monroeville), 5/23, p.95
Attacks wage inflation (cost per hour's work), 3/21, p.97
Blooming mill (52 yrs old) sets production record, (Youngstown-Ohio Wks.), 2/8, p.35
Columbia-Geneva: Iron ore project in Wyoming (Atlantic City), 6/13, p.141
Expands plant facilities, 2/1, p.71
Expansion programs, 3/28, p.78
Gas turbine blower ordered for blast furnace, 5/2, p.81
Gary Wks., plate mill contract, 3/14, p.51
Gary wide plate mill, 4/4, p.124
Homestead Wks.: Rotors heat treated upright, process electric power generator shafts, 6/13, p.172
McDonald Wks.: Control package (preassembled drives-controls) expedite mill revamp, 3/7, p.84
National Tube: Continuous fluoroscoping spots pipe weld defects, 4/11, p.96
Pressure poured billets, pilot plant, 3/7, p.90
Research center revamps rolling mills at Monroeville, 3/14, p.102
Stockholder Relations Dept., 2/8, p.34
Strapping unit, IE, 4/4, p.170
Structural mill, Chicago, dedicated, 6/20, p.54
Thin tin plate, 5/2, p.39

U. S. Systems Inc.:
Elects, B, 1/25, p.63

U. S. Tool Co. Inc.:
Double ended unit for stampings, IE, 4/11, p.107
Power straightener removes coil set, IE, 1/11, p.90

United Welders Inc.:
Machine welds and assembles, 6/13, p.173

United Welding Co.:
Sold, B, 6/27, p.73

Universal-Automatic Corp.:
Sigmatic line welding machines, IE, 5/9, p.166

Universal-Cyclops Steel Corp.:
'InFab' hot works refractory metals, 6/13, p.116

Upjohn Co.:
Plastic valves resist sulfuric acid, 2/1, p.98

V

Van Gorp Mfg. Inc.:
Wing pulley, IE, 4/4, p.168

Vanguard Engineering Co.:
Name change, B, 2/22, p.64

Van Huffel Products Inc.:
Buys power lines, B, 4/4, p.128

Van Norman Industries Inc.:
Merges American Pulley, B, 5/30, p.65

Vapor Heating Corp.:
Steam generator, water for Greenland snowbound crew, 4/18, p.73

Vascoloy-Ramet Corp.:
Titanium carbide grade, fine structure, IE, 5/16, p.122

Versa Products Co. Inc.:
Solenoid valve for fluids, IE, 2/1, p.102

Victor Equipment Co.:
Buys L. B. Welding, B, 4/25, p.104

Virginia Metalcrafters Inc.:
Buys Copar, B, 1/25, p.63

Virginia Tool Co.:
Induction heater for brazing carbide tips, 2/29, p.95

Vulcan-Associated Container Co.:
Organized through mergers, 3/14, p.88

W

W & M Products Corp.:
Changes name, 1/18, p.81

WalMet Alloys Co.:
Increase ductility of 17-4 PH, 4/25, p.127

Wales-Strippit Inc.:
Punching, notching unit, IE, 3/7, p.108

Walker Mfg. Co.:
Ceramic coated auto mufflers, 6/6, p.89

Wall Colmonoy Corp.:
Brazed design cuts machining costs, 2/8, p.94
Self-fluxing alloys, 2/29, p.98

Wallace Supplies Mfg. Co.:
Bending machine, IE, 2/8, p.96

Waltham Precision Instrument Co.:
Buys Electro-Mec Lab, B, 5/2, p.63
Buys Motor Div., B, 1/25, p.63

Waltz Furnace Co.:
Car bottom furnace-uniform temp., IE, 4/4, p.159
Heat treat furnace automatic, IE, 5/30, p.87

Warner & Swasey Co.:
Cole: Machine tool builder looks ahead, three basic changes, 1/25, p.66
Cole: Revolutionary methods solve problems, 1/25, p.78
Research center at Solon, plus four additions to machine tool line, 6/6, p.111
Standard attachments, IE, 6/13, p.176
Tape control trims production time, 5/30, p.74
Trepanning lathe for beryllium billets, 6/13, p.162

Waterbury Farrel Foundry & Machine Co.:
Cold forming: Waterbury Farrel gets set . . . 5/9, p.144

Waterman Engineering Co.:
Name change, B, 1/18, p.81

Waterman Hydraulics Corp.:
Lightweight solenoid valves, IE, 1/11, p.90

Wean Engineering Co.:
Contracts for Halogen process, electrolytic tinning line, 2/15, p.103
Flying press without gears, IE, 2/29, p.98

Webb & Knapp Inc.:
Sets up Montana steel mill, 5/30, p.27

Webber Mfg. Co. Inc.:
Environmental chamber, IE, 3/21, p.185

Weirton Steel Co.:
Tin plate coil side trimming line, 2/1, p.71

Wells & Son Inc., W. F.:
Bar feed attachment, IE, 6/27, p.96
Horizontal bandsaw, IE, 2/8, p.98
Metal cutting bandsaw, IE, 3/21, p.185
Power feed unit, IE, 4/11, p.118
Speed saw, IE, 1/4, p.369

Wesco Tool & Mfg. Inc.:
Tools cool with pump unit, IE, 1/4, p.368

Western Electric Co.:
Indianapolis plant: Departure from custom speeds up riveting line, 3/28, p.88

Western Sky Industries:
Dome loaded gas regulator, IE, 1/25, p.82

Westinghouse Electric Corp.:
AF-Westinghouse electronics program (molecular units), 2/1, p.44
Arc power for studwelder, IE, 2/22, p.89
Automatic machine brazes turbine blades, 3/21, p.162
Circuit breaker plant, B, 6/13, p.150
Cresap urges tax change, 3/7, p.37
Fluoroscope detects concealed bombs, airlines, 1/25, p.33
Hot cracking test of stainless and other alloys, 2/8, p.81
Kennedy: STEEL interview, 5/9, p.95
Magnets handle cold rolled sheets, 1/25, p.72
Shipping transistorized system (Comex), 5/23, p.75
Nuclear lab installs rolling mill, 2/22, p.71
Nuclear powerplant in orbit by '70: Simpson predicts, 4/11, p.43
Thermoelectric generator, experimental unit for Navy's Bureau of Ships, 5/23, p.78

Transistor static inverter: Tiny work horses promise cheaper conversion of dc to ac, 4/4, p.140
Speed drives ac, IE, 6/13, p.184
Thermoelectric cooling equip. in commercial supply, 2/8, p.83
Thermoelectric refrigerator before yearend, 3/28, p.49
Thermoelectric refrigerator passes test, 4/25, p.55
Wound rotor motors high starting torque, IE, 3/14, p.11

Weston Instruments:
Infra-Ray gage, sorts scrap and measures sheet on finishing stands, 5/30, p.81

Westover Corp.:
Separated from foundry div., B, 4/18, p.111

Westprest Inc.:
Formed, B, 5/2, p.63

Wheatland Tube Co.:
Forms conduit firm, B, 1/25, p.62

Wheelabrator Corp.:
Buys interest in Lord Chemical, 1/11, p.67

Wheeling Steel Corp.:
Expansion program ($8 million) for Ohio plants, 3/14, p.77 and 2/15, p.106
Oxygen study for replacing bessemer facilities, 4/18, p.111
Oxygen plant, jointly owned, 5/30, p.64
Price hike warning, 3/21, p.83

Wheels Inc.:
Leases autos, 2/8, p.35

Wisconsin Metal & Chemical Corp.:
Organized, B, 6/6, p.83

Whiting Corp.:
Cupola melt process produces ingots, 5/2, p.74

Wiedemann Machine Co.:
Buys testing machine line of B-L-H, 5/30, p.65
Numerical controls, process engineering, 5/30, p.72

Willys Motors Inc.:
Assembly line activated, 2/15, p.64

Winslow Mfg. Corp.:
Piston compressors, IE, 2/1, p.104

Wilson Inc., Thomas C.:
Portable air drills, IE, 5/23, p.156

Wintriss Inc.:
Multiple feeler assembly protects from overloads, IE, 1/11, p.96

Wisconsin Drill Head Co.:
Versatile machine, IE, 4/18, p.153

Woodruff & Edwards Inc.:
Buys Richmond Foundry, 2/22, p.65

Wood's Sons Co., T. B.:
Shell-mold foundry new, 3/14, p.80

Woodward Iron Co.:
Facilities, B, 4/18, p.114

Woodworth Co., N. A.:
Retractable air coupling, IE, 2/15, p.144

Worrester Pressed Steel Co.:
Subsidiary, Westprest Inc., 5/2, p.63

World Electric Co.:
Work positioner, IE, 6/20, p.128

Worthington Corp.:
Air cooled compressor, treated paper filter, IE, 3/21, p.194

Wyman-Gordon Co.:
Moves forging facilities, B, 6/20, p.93
Superalloy forgings leap size barrier: Luchok and Moore, 1/11, p.72

Wysong & Miles Co.:
Bending roll forms cylinders, IE, 1/18, p.103

Y

Yale & Towne Mfg. Co.:
Hand lift truck, IE, 2/8, p.100

Yates-American Machine Co.:
Tilt disc sander, IE, 5/30, p.98

Yoder Co.:
Roll forming line for Japan, 3/14, p.37

Young Bros. Co.:
Top loading oven to 950°, IE, 1/25, p.87

Young Spring & Wire Corp.:
Moves to Calif., B, 2/8, p.72

Youngstown Sheet & Tube Co.:
Conduit tubing finishing line, 4/25, p.127
Glossbrenner: Foreign competitors, 6/20, p.53
Glossbrenner: Ingot output forecast, 4/11, p.46

Z

Zagar Inc.:
Tapping head, IE, 5/9, p.164

Ziegler Steel Service Corp.:
Honolulu Div., B, 4/25, p.100

AUTHOR INDEX

H

Hausner, Henry H. and **A. R. Poster,** Sylvania Electric Products Inc., Slip casting technique widens powder metallurgy, 2/15, p.120

Heinold, Lou, Federal Products Corp., You can gage to millionths, but . . . 3/21, p.144

L

Lebach, John L., Baldwin-Lima-Hamilton Corp., Hydrostatic presses form shapes, reform properties, 4/11, p.93

Luchok, John and **J. B. Moore,** Wyman-Gordon Co., Superalloy forgings leap size barrier, 1/11, p.72

M

Moore, Joseph B. and **John Luchok,** Wyman-Gordon Co., Superalloy forgings leap size barrier, 1/11, p.72

P

Pearson, John S., Naval Ordnance Test Station, ABCs of explosive metalworking, four ways to produce welds, 3/21, p.140
Poster, A. R., Sylvania Electric Products Inc., Slip casting technique widens powder metallurgy, 2/15, p.120

T

Thomas Jr., R. David, American Welding Society, Welding equipment makers aims, 4/11, p.89